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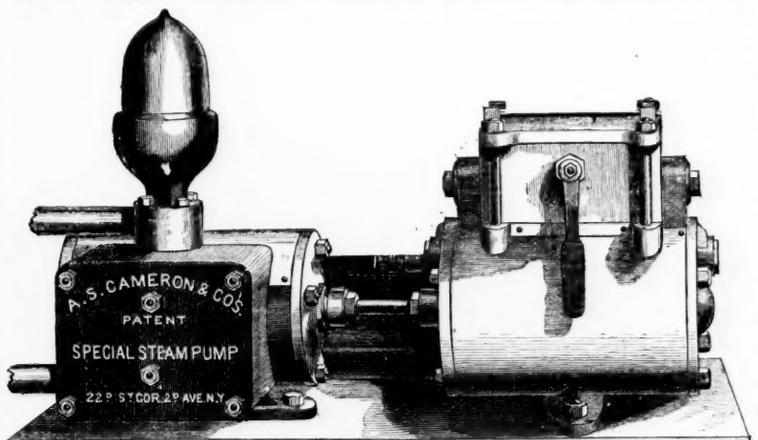
STEAM PUMPS.

In this issue of the JOURNAL OF MINING we present a faithful illustration of the "Special Steam Pump"—one of the styles of steam pumps built by Messrs. A. S. Cameron & Co. at the Union Steam Works, corner of Twenty-second street and Second avenue, N. Y. It is remarkable for its extreme simplicity; the working parts consist of the steam and pump pistons, steam and pump valves only, placed in their respective cylinders, and without any intermediate machinery whatever. There is not a single journal. The machines require no lubrication. In size they range in regular proportion from the merest toy up to the largest water-works and mining pumps. We learn, at the manufactory, that there are a great many of them in use, not only in the United States, but also in South America, China and the Continent of Europe, adapted to every possible situation—such as feeding boilers, steam fire engines, for pumping oil, air, acids, mash, molasses, etc. They are considered peculiarly adapted to mining purposes on account of their simplicity and strength, and there being no working parts exposed to accident or neglect. Messrs. Cameron & Co. inform us that these pumps are in operation in some of the most extensive mines in the country, placed at a depth of several hundred feet, and pumping to the surface, steam being conveyed to them in protected pipes—all giving the utmost satisfaction. In pursuing our series we shall present our readers with other styles of pumps built by this firm; they embrace over one hundred patterns, arranged for every conceivable duty.



THE SPECIAL STEAM PUMP.

Riches of South Africa.

Le Moniteur Universel says: "It is reported at the Cape and at Natal, that extensive mines of gold have been discovered in the Dutch republic of Transvaal, and that the President Pretorius is engaged in ascertaining the truth of the statements. This fortunate country possesses also, as has been known for many years, ores of copper containing 95 per cent. of metal; lead also abounds, and coal is found in large quantities. After torrents of rain have fallen, the Boors are frequently seen to start out with their wagons to the banks of the rivers, and there procure what coal they require for winter's use, which the tempest has carried away and accumulated in the bed of the river.

Iron Working in "the Olden Time."

In old times it was usual for the iron worker not only to supply his customers with hardware, but to manufacture the iron from which he produced it. This old way of working lingered long in the northern counties of England, for it is said that the father of the late Mr. James Cockshut, of Pontypool, England, found, some years ago, an old man working by himself at a bloomary forge, in a remote part of Yorkshire, and saw him work with his own hands, a piece of iron, from the ore to the bar!

The Conservation of Force.

Earl Russell, on the 8th of August, delivered an address at Tavistock, before the Devon Scientific Association, wherein, after referring to the great discoveries and generalizations regarding light made since the time of Newton, and to photography, he said that perhaps the most valued of the generalizations of science in the present century were those relating to the conservation of force, to heat, light, electricity, magnetism, galvanism, chemistry, neuricity, as being modes of force, and to their universal convertibility into one another. The material advantages to be derived from Oerstedt's experiments with his small magnets, voltaic pile, and bits of copper wire, seemed hardly appreciable. Yet from these, and the discoveries springing from these phenomena, has come the electric telegraph. The question apt to be put on the announcement of any discovery of abstract science—the question of "*cui bono?*"—had been often answered by experience. Prof. Black, of Edinburgh, knew not that his experiments on the abstract nature of caloric, and his discovery of "latent heat," would point out to Watt the improvement of a steam engine.

Fine Specimens.

The Portage Lake *Gazette* describes some specimens worthy of notice. One, of copper, is a hollow shell, or "vug," properly speaking, about the size of an ordinary man's head, with an opening of about one-third of its surface. The middle and sides of the "vug" is composed of leaves of copper and silver, in shape resembling the narrow twisted leaves of a thistle, or to other minds they also resemble dragon tongues. The beauty and rare shape of these curious forms of copper cannot be well described, they must be seen to obtain a good idea of their splendid appearance. Besides these there are several fine crystals on the sides of the cavity, which in themselves are really fine specimens. The exterior of the specimen is also a fine and rare mineralogical study, having in its composition four or five metals and eleven varieties of minerals. A second specimen, of "silver-steel," is almost round, sitting in a sort of dish of quartz, and contains a large quantity of silver-steel ore, several magnificent crystals of the yellow sulphuret of iron, and has scattered specks of what is said to be free gold, silver, silver-lead, etc.

A Valuable Work.

The *Journal des Debats* says that M. Michael Chevalier, who published a treatise on 'money,' in 1850, has completely revised it, in consequence of the important discussions which have taken place since, respecting new mines of gold, and also with relation to banking. It forms an octavo volume of 800 pages, and besides going into the merits of gold and paper currency, it gives a succinct description of the principal mines of silver or of gold which exist in the world, and the history of their exploitation, an account of the discovery of the mines of precious metals in the new world, in the sixteenth century, and an appreciation of the influence exercised thereby; a recital of the discovery and exploitation of the mines of northern Russia, of California and of Australia, with an appreciation of the results to be expected therefrom, and calculations of the quantities of metal they have furnished. Among the numberless questions treated of, is that of an universal money, and the means of realizing it. There are few works, says the *Journal des Debats*, which present such scientific and practical interest as does this.

A Great Geological Discovery.

The San Francisco *Alta*, of July 17th, says: The State Geological Survey of California has recently made a discovery that will attract attention all over the world, and that will become a notable fact in the history of geology. Every person of intelligence is supposed to know that the age of the earth, according to the unanimous opinion of geologists, is not less than a million of years; that there have been successive epochs of animal and vegetable life, the remains of which are found deep in the rocks; that the animals and plants of the earlier epochs differ from those now living on the earth; and that, until very lately, nothing had been found to show that man lived on our globe before the beginning of the present geological era. A few years since, however, some human bones were found in England and France, showing that men lived in those lands in a former epoch, contemporaneously with the hyena, rhinoceros, the elephant, and other animals which disappeared from Europe long before the beginning of our historical records. This

discovery made a great sensation in the learned world, and was the basis of Lyell's great book on the "Antiquity of Mankind." The ancient human bones of Europe were found in the later tertiary formation; but now a human skull has been found in California in the pliocene, a much older formation. This skull is, therefore, the remnant not only of the earliest known pioneer of this State, but the oldest known human being. An account of the discovery was given last evening in the California Academy of Natural Sciences, by Prof Whitney. The skull was found in a shaft 150 feet deep, two miles from Angels, in Calaveras county, by a miner named James Matson, who gave it to Mr. Scribner, a merchant, and he gave it to Dr. Jones, who sent it to the State Geological Survey. Prof. Whitney went to the place, examined it, questioned the persons who had had the skull in their possession, and he is entirely satisfied that it was found in the shaft, as represented. There is some water now in the shaft, but it is soon to be taken out, and then the Professor will resume his examinations. The shaft passes through five beds of lava and volcanic tufa, and four deposits of auriferous gravel. The upper bed of tufa is homogeneous and without any crack through which the skull could be introduced from above. The published volume of the State Survey on the Geology of California states that man existed here contemporaneously with the mastodon, but this fossil proves that he was here before the time in which the mastodon was known to exist. Prof. Whitney has divided the palcontology of the State into two epochs; the pliocene, or the epoch before the great volcanic eruptions which covered a large part of the State, and the post-pliocene, or the epoch after the eruptions. Most of the prominent animals, the fossils of which have been found here, such as the mastodon, elephant, horse and buffalo, have not been encountered in the pliocene, and all the vegetables so far met there are of species not now living in the State. We can now say unqualifiedly that man lived in California before Shasta, and Mount Lassen and the Downieville Buttes and the numerous volcanic peaks of the Sierra raised their heads to the clouds; before the era of the glaciers, which came after the volcanoes, and swept down the mountain sides in immense rivers of ice; before the great canons were worn on the western slope of the Sierra Nevada, and when the rivers were still running on what are now the tops of the mountains. Casts of the skull, which is not entire, will be sent to the principal ethnologists of Europe and the Atlantic States, with requests for their opinion of it. The facial angle is very similar to that of a Digger Indian of the present day.

New Tunnelling Machine.

From the London *Mechanics' Magazine*, of Aug. 3d, we learn that a patent has been granted in England, to H. N. Penrice, for improvements in machinery employed in forming tunnels and galleries in rocks. For these purposes, a circular plate or frame with radial arms or otherwise is employed, on the face of which are projecting tools or cutters, which are set in concentric circular rings or otherwise, and it is sometimes preferred that, when such projecting tools or cutters are set in concentric circles, the cutters or tools of some of the rings should project beyond others, in order that they may produce circular grooves in the face of the work, whilst other circles of the tools or cutters break down the rings of rock intermediate of the circular grooves. This frame or plate is made to move to and fro a short distance at a high velocity, and such plate or frame is caused to turn so that each tool or cutter may be advanced slightly between the succeeding cuts. In these particulars, and in regard to constructing the engine which gives motion to the plate or frame, the present machinery is nearly similar to that previously employed by the present patentee, and which is well known. The small engine, which drives the slide valve of the larger cylinder also by suitable gearing, gives the step-by-step rotation. The forward part of this machinery is supported by a sledge or curved support of the radius of the cylindrical cut made by the machinery. The sledge or support is made in two parts, one of which is capable of adjustment, whilst the other part is fixed. This arrangement is necessary, in consequence of the tendency of the fore part of the machine to drop in working. The hinder part of the machine is carried by a pair of wheels which are in radial planes, so that they do not rest on the bottom of the tunnel, but have an angular space between them, leaving the bottom of the cutting for the passage of the slush, and for the broken stone to be moved back, which is done by an endless chain with rakes thereon. The engine is worked by compressed air, steam, or other fluid, and in order that the carriage of the machine may be moved up to its work, and at the same time be in a condition to resist the shocks consequent on the strokes or blows of the tools or cutters on the circular plate or frame, a third wheel is employed, which is constantly pressed upwards with force against the roof or top of the cutting by a powerful spring.

An Oil Strike.

Storrow, No. 3, is the name of a well on Dennis Run, Pa., struck this week, and producing over 200 barrels.

Mining Summary.

California.

An abundance of ordinary mining news has come to hand by the last steamer, but the half yearly review of the mining operations in California, published by the San Francisco *Mercantile Gazette*, is so comprehensive that we think a condensation thereof will prove more interesting than anything else that could be offered under this head to the readers of the JOURNAL OF MINING. It seems then, according to our authority, that throughout the State a systematic method of co-operative labor has, to a great extent, taken the place of hap-hazard individual work, the results, and still more the prospects of which, encourage the employment of larger capital. In placer diggings the river bars and smaller gulches being to a great extent worked out, the basin-like flats and beds of ancient rivers are being explored at depths of 50 to 300 feet below the surface, where are found deposits of auriferous gravel (from one to ten or even twenty feet thick, with a breath of one hundred to two or three thousand feet) or strata of cement, some quite soft and easily separated by water, but usually so indurated and tenacious as to require crushing in a battery and amalgamation, like auriferous quartz. Much of this cement is found to be rich in free gold, yielding a larger percentage of metal to the ton than quartz, while at the same time it is much more easily raised and worked. The gravel is found to be especially rich in gold, a carload, or occasionally a single pan, yielding several ounces. These gravel and cement beds have hitherto proved a profitable class of diggings, single companies cleaning up after a month's run thirty, forty, and even as high as fifty thousand dollars. The gross annual product of the Blue Gravel company's claim, Butte co., is $240,000. Within the past few years several other companies in that vicinity have done nearly as well, while in other localities not a few have been worked with large profit. Of late this description of claims has greatly risen in value, some but partially developed, and in other cases before being opened at all, selling for large sums of money. One situated near Smartsville was disposed of not long since for the sum of $115,000, the owner retaining an unassessable one-tenth interest therein. More recently several properties of this kind, lying near North Bloomfield, Nevada county, were sold, according to report—the one for $150,000, and the other for $200,000. The purchasers of these grounds will at once proceed to open them in the most effectual manner. Many of these alluvial flats are crater-shaped, being surrounded with a rocky run that precludes natural draining to any great depth, and which, before they can be worked to any advantage, require the construction of bed-rock tunnels in which the water and tailings can be run off. These tunnels are often works of great magnitude, being many thousand feet long, costing immense sums of money, and requiring several years for their completion. Water has been diverted to placer mining to a much greater extent than formerly, being brought to bear on its work through the agency of sluices, hose and other hydraulic gear, whereby its force can be applied with the greatest practical effect. For collecting and conducting this element to the points where required for use, reservoirs covering hundreds of acres of land, and aqueducts hundreds of miles in length, have been built, at a heavy outlay of labor and money, and scarcely a month passes but we hear of some new agent or novel contrivance being brought into use for expediting the labor or economizing the cost of separating the free gold from the worthless material in which it is embedded. Even the more common elements—the rain, frost, atmosphere and heat of the sun are availed of for this purpose, immense quantities of tailings, after being exposed for a year or two to these influences, often paying well for washing over a second or third time. Owing to the generous supplies of water, this year has been propitious to hydraulic mining, which has accordingly in many localities been prolonged beyond the usual period, and everywhere attended with a good degree of success. In its prosecution a single hose pipe is made to do the work of many men, rendering profitable the washing of vast bodies of earth that would otherwise be valueless. In the use of gunpowder, employed to shatter and loosen the earth—several hundred kegs being often used at a charge—is found another efficient ally and labor-saving agent in this class of mining. Latterly, also, steam has been brought into requisition, in a few cases, for raising water for hydraulic washing where it could not otherwise be obtained. Preparations for river-bed mining are being made at a number of points the present season. The mode of procedure here is to dam the stream, and diverting it into a flume, lay bare its bed, which is then worked by means of sluices; or at least such portions of it as may be found to pay. These operations have heretofore so often proved failures that they have come to be left mostly to be carried on by the Chinese, who are content to work for smaller wages, or perhaps take greater chances than the whites. Quartz mining is in a still more progressive and promising condition. Labor and *materiel* are cheaper—machinery more reliable and more easily transported, and the old theory that quartz veins paid best at the surface is subverted. Any one desirous of engaging in quartz mining has now the same means for calculating results as when embarking in the most ordinary kinds of business. The cost of erecting and outfitting a quartz mill can be computed beforehand with as much precision as the cost of a woollen factory. Even the average yield of a ledge can generally be arrived at with sufficient closeness for all practical purposes after it has been opened to a point that enables the expert to judge of its peculiar features and the predominating character of the ores. These statements will be abundantly substantiated by even a casual glance at the operations now going on in different parts of California. Beginning at Clear Creek, the most southerly point in the State at which the business is at present carried on, we find here a great number of ledges, many of them narrow, varying in width from one to six feet, but so far as opened giving evidence of decided richness. This district, though not settled above two years, contains a population of several thousand; has ten or twelve quartz mills now running, with a number more, some of them of large capacity, in course of erection. The number of ledges already located in that section of country exceeds 500, though but a very small proportion of these have been at all developed. Some of the quartz is extremely rich—the aggregate yield under the stamps approximating $40 to the ton. As a general thing it is easily raised and reduced, the veins being soft and the rock little mixed with the baser metals. The facilities for working both the mines and ores are good, wood and water being in fair supply in the vicinity. This district is situated on the western declivity of the Sierra Nevada, and is distant from San Francisco, by the most frequented route, 350 miles in a southeast direction. Near White Creek, and also at various points along Kern River—streams to the north of Clear Creek—there are a number of small quartz mills and quite a good many arastras, mostly driven by water, all of which have for several years past been doing a thrifty business, running on rock obtained from the rich but narrow quartz veins that abound in the neighborhood. At all these points new mills, generally of greater capacity than the old ones, are being put up this summer, and the prospect is that they will make money for their owners. Coming still further north through the counties of Tulare, Freens, and Mariposa, we find comparatively little doing. Throughout the counties of Tuolumne, Calaveras, Amador and Colorado, constituting the middle district of the State, a marked degree of activity is observable. The numerous and extensive mills throughout this region are nearly all running, and generally with diminished expenses and increased earnings. The number of these structures going up this season is also large, those already built being inadequate to the work of crushing the rapidly accumulating ores. Capital is going quite freely into this section, many heavy purchases of mining properties having been made within the last quarter, and a variety of enterprises, involving the expenditure of large sums, have meanwhile been set on foot. It is a feature of many of the ledges in this district that they carry much free gold, found in nuggets or bestowed in pockets of frequent occurrence along the course of the vein. Still the quartz here is not supposed to pay as evenly or to give as high an average yield as elsewhere in the State. The district, however, from its proximity to the great centres of mining supply, has the advantage of cheap freight, being at the same time well furnished with wood, water and the other staples essential to economy in the exploration of metalliferous veins and the treatment of their ores. Among the more productive and profitable mines in this quarter, the Soulsby, near Sonora, and the Hayward, in Amador county, take precedence—the net earnings of the latter being from $30,000 to $40,000 per month. Its entire yield since 1853, when it was first opened, has been nearly $7,000,000, and although now being worked at a point 1,200 feet beneath the surface, it fails to present signs of impoverishment. The Northern district comprising Placer, Yuba, Nevada, Sierra, Butte and Plumas counties, covers what may be justly considered the balance of the quartz mining region of California, as well as the site of the earliest and most extensive operations yet undertaken in the prosecution of this business. While each of these counties contains a large number of mills and a multitude of ledges, many of them highly prolific and thoroughly developed, Nevada, considered in this connection, has from the first, entitled herself to the distinction of being called the "Empire" county of the State. In this county, the district of Grass Valley is the most important locality, since it will produce, the present year, a sum exceeding $5,000,000, and will before the season closes, contain within its limits, about thirty well appointed and in every respect first-class quartz mills, carrying in the aggregate over 300 stamps, and having a capacity for reducing nearly double that number of tons of quartz daily. The magnitude of this interest is displayed if we examine a few of what may fairly be considered representative mines. The yield of the Allison Ranche Mine for the half year under notice has been $10,000 per month—a total of $240,000, more than half of which may be set down as clear profit. This was extracted from some 2,300 tons of ore, the average yield being $104 per ton. This vein is now being worked at the depth of five hundred feet, at which point it is three feet wide, and exhibits a compact and well concentrated body of ore, uniformly of high grade. This company runs a 12-stamp mill, capable of crushing only about 125 tons per week. The North Star is undoubtedly one of the most valuable about Grass Valley, and has been developed in a thoroughly scientific and substantial manner. It is opened by a main incline 665 feet long, and having a vertical depth of 250 feet. The vein, which lies quite flat, and varies in thickness from one to six feet, averaging about two and a half, has been exposed in the lowest level some 425 feet easterly from the main shaft, and 640 feet in the same direction in the next level above, securing for it a thorough exploration between the bottom level and the two levels above, the length and average width of the vein being well ascertained by actual measurement, it is thought that from the bottom of the shaft to the surface, 30,000 tons of ore still remain untouched, valued at over $900,000. The great wealth of this mine will however probably be found in sinking still deeper, inasmuch as the lode has shown a steady improvement as descended upon. Although dividends have been declared at irregular intervals since 1852, the real prosperity of the mine dates from 1861, and during the past four years a net profit of $500,000 has been realized, of which sum fully $125,000 was expended in improvements, including a substantial mill, capable of crushing at least 35 tons of ore per day, leaving $375,000 for actual dividends. All this was accomplished with a 6-stamp mill, running in 1862 and 1863, and since then by one of 9 stamps. The returns for the first five months of the present

year reached nearly $90,000, extracted from some 2,500 tons of ore. The average yield of the rock has been about $35 per ton for several years past, that more recently crushed running up to nearly $40. This valuable property, including the new 16-stamp mill, was not long since purchased by several capitalists of this city, for $450,000. The gross earnings of the Eureka mine for the eight months ending May 31st, were $284,000, their expenses having meantime been $103,000, leaving a balance in their favor of $181,000. During the month of June last the product of this mine was $73,000, besides sulphurets valued at $2,500, estimated expenses being meantime $13,000. The average yield of the ore during that month was at the rate of $65 per ton. The yield during the last three months of 1865, was at the rate of $33 87 per ton, while the lot crushed during the first five months of the present year gave an average of $42 67 per ton, showing how uniformly but very materially the ore increased in value as the mine was developed downward. The present lowest level in this mine is 300 feet beneath the surface. The cost of mining and milling this ore was about $13 per ton, this being about the average cost at Grass Valley. The Ophir is another of the rich and promising mines of Grass Valley. The claim is well opened, and the company have just finished one of the most superb mills ever erected in the State, built at a cost of $125,000. It runs 30 stamps and has a capacity to reduce over 60 tons of rock daily. The Ione Company possess a ledge of good size and unquestionable richness, which they have lately been subjecting to a rigid exploration. The earnings of their mine, though not yet worked to any great depth, has sufficed during the past few months to pay current expenses and defray the cost of a 10-stamp mill. The Hueston Hill Company, owning a six-inch vein have been able to divide among themselves $8,000 per month, since January last. The Norambagua, one of the mines of the Forest Spring Company, has been doing well, and at this time is probably in a more promising condition than for several years past.

The aggregate production of this claim has exceeded $1,000,000, and it is thought that regular dividends can be made hereafter, under judicious management. Active operations continue upon Osborn Hill, New York Hill, Massachusetts Hill and Union Hill, and many other claims in this locality are increasing their net earnings. The Kate Hayes mine, purchased a few months since by parties in this city, is undergoing a vigorous development, and we are informed that recent explorations are regarded with much favor. Many of our capitalists have lately become largely interested in the partially developed coal mines of Mount Diabolo and elsewhere upon this coast, with a view to pushing them forward to such a state of productiveness as will supply the home demand. In the meantime, the coal mines in this State and in Washington Territory, are turning out their ordinary supplies of a steadily improving quality of fuel which, recommended both by its excellence and cheapness, is growing in favor with all classes of consumers. Throughout all parts of the mineral bearing belt of this State discoverics of copper lodes are reported, some of which would appear to be of much prospective value. The Union and Keystone have, during the past six months, yielded as well as at any previous period, the former turning out at the rate of about 2,000 tons per month, and the latter considerable quantities of medium grade ores. Much work of a preparatory kind has been done in these claims of late, fitting them for more extensive operations hereafter; and as they exhibit large bodies of good ores in all their shafts and lower levels, it is expected that henceforth the quantities raised will be considerably increased. Many other lodes in the vicinity of Copperopolis are now beginning to yield, and in the course of the next half year will largely augment the shipments of ore from that vicinity. In the New Almaden quicksilver mine, whence 90 per cent. of all the metal produced in this State is extracted, operations are being carried on with energy and good results. The working force is not less than 1,300 men in the various departments. The company have recently much enlarged their reduction works, and it is understood have also introduced some valuable improvements in their mode of treating the ores. Active operations, after having been suspended for a number of years, have been resumed at the New Idria mine, and, it is reported, with encouraging prospects of future success. About 100 men are now employed in the Redington Quicksilver mine, near Clear Lake, upon which extensive furnaces have lately been erected and other improvements made —insuring for the current year, as is believed, a large product of metal. At various other points in the State deposits of cinnabar have been found, some of them of presumed value. The production of California Petroleum is steadily increasing, and is evidently destined to become a great source of wealth to the State. The adoption of new methods of opening the claims, by tunnels rather than by boring wells, has in most cases given satisfactory results, and a steady supply of good thin oil, like that from Pennsylvania, has been obtained in several places. Regular shipments are now made from San Buenaventura to San Francisco, and one claim has furnished over 1,500 bbls., which is not one-fourth probably of what might have been saved. Preparations are making for a more active development by tunnels, which it is now believed are much more likely to cut the springs of oil than vertical borings. The localities of thin green oil resembling that of Venango County, Pa., are numerous in the Santa Anna and the Azurfre mountain ranges, and several are being developed by San Francisco capitalists, with every prospect of success. Two or more refineries are now in operation in this city, producing a superior quality of illuminating and of lubricating oil from the native Petroleum. A large refinery is being erected at the Buena Vista claim, in the Tulare Valley, where there is an extensive region, giving promise of an abundant supply of oil. The source of supply of Borax is a large and shallow basin called "Borax Lake," near Clear Lake, in this State. Hitherto the company who own this property have raised about 3,000 pounds of crystals per day. But they are now preparing to extract borax from the mud of the lake by lixivation, the mud containing 14 per cent. of borax and 28 per cent. carbonate of soda. This rich mud, covering an area of about two hundred acres, will afford many thousand tons of borax per annum, for a period practically unlimited. The company expect in the course of a few weeks to turn out between five and ten tons per day. Borax Lake is a shallow pond, which in the month of September is nearly or quite dry, and covered with an incrustation of borax, soda, and common salt, giving it the appearance of a field of snow. On the land belonging to the Borax Company, consisting of about three thousand acres, held under a patent from the United States, there is also a very large deposit of sulphur, estimated to contain many thousand tons. The company are now producing about ten tons sulphur per diem, of quality known as brimstone.

Michigan.

The Marquette Mining *Journal* of the 10th inst, says: The only report of ore shipments we have received is from the Lake Superior Iron Company. They have shipped during the six days ending August 10th, 3,222 tons. . . . . The Ontonagon *Miner* of the 11th, states that the July product of the Rockland mine was about 8½ tons; of the Ogima 13 tons 1697 lbs; of the Caledonia 9½ tons. The Ætna is still improving. . . . . From the Keweenaw *Times* of same date, we gather that the mines of Keweenaw county are very promising. . . . . The Portage Lake (Houghton) Mining *Gazette* of Aug. 9th states that the July product of the Isle Royale mine was 30 tons 880 lbs. The balance of the companies are slow in weighing up and reporting. . . . . A correspondent of the *Times* has written a series of long but very graphic letters from Lake Superior, which we condense. The first that attracted our attention was dated Marquette, July 30th, wherein he says: The first mine I visited was the Lake Angeline, one of the younger mines of this region, situated on the Bay de Noquet Railroad, and about seventeen miles from Marquette. The cars of this well managed road set you down within a brief walk of the mines. This iron mine is worked in the simplest manner, to wit: as a stone quarry is worked. Commencing at a certain level, the miners drill the rock, and blast right in, keeping a "face," and carting away the ore as it is blasted, and as soon as picked and shovelled down. This is a region of redness. Be your boots ever so neatly blackened, they are speedily converted into the prevailing hue by the clinging red dust that is everywhere. The miners are red-legged and red-armed. Walking down the railroad track a mile or so, we come to the Lake Superior mine. This mine is now some eighty years old, and consequently is much more picturesque than the Lake Angeline—the latter being but some three years old. We passed through a deep cut in the rock into a vast amphitheatre surrounded by towering walls, red and rugged. Down below was a deep hole into which a huge crane lowered great iron buckets, which came up filled, and swung around to a car at the mouth of the cut, which, when filled, is rolled away. Moving over to the left, we came upon another deep hole, or shaft, at the cool bottom of which stood a horse and cart, which laborers were loading with ore. From this shaft extends a long tunnel or adit, through which the carts are driven seven hundred feet to the light outside. This tunnel extends four hundred feet further into the bowels of the earth, and is "tapped" by two more shafts like the present one. We ramble about and about in this strange, wierd place, up and down rugged hills, and through long and muddy tunnels. The pools of water which gather in the tunnels and elsewhere are as red as blood. Now towering walls loom above our heads, some a dusky red and others a gleaming lead color; now great gorges open at our feet, and down below carts and miners are loading and drilling. Some of the rocky walls are curiously embroidered in seams of differing hues. Presently we come to a point where the mine ends with a sharp triangular cut; here the ore has given out and the mine is no longer worked in that direction. The adits to which I have alluded, are run in from points lower down the eminence, in order to work upward, and get the ore at that part of the mine which has hitherto served as a floor for operations. One of these adits runs directly under the track of the Bay de Foquet railroad. I would recommend this mine as a most interesting one for tourists to visit. They will need a guide, however, if they would see it well. The Jackson Mine, which is situated at Negaunee on the railroad already named, is the one which is, I believe, most frequented by pleasure parties. I found it less interesting by far, however, than the Lake Superior Mine; but it is true, I had no guide when I visited it. It has the attractive features of being the oldest mine in the iron region. It has been worked some twenty years. The Lake Superior iron range, as I presume my reader is aware, is confined to this part of the State of Michigan. The copper range, with its numerous mines, is further up the lake, and of that I shall speak in future letters. Marquette is the shipping outlet of this region. The mining companies which are now working are nine in number. Some of these have three or four mines at different points near to each other. The oldest mines, as already stated, are the Jackson Company's. Though it commenced working twenty years ago, it is only about nine years since it began to ship its ores. Previous to that period it made what are termed "blooms," by means of a small forge or "bloomery" on its premises. The ore was pudated, that is, heated sufficiently to be pounded into bass, but not melted, as is now done, in the blast furnaces, producing the iron. The second in point of age is the Lake Superior Company. Its works was commenced some nine years ago. The Cleveland is about the same age. The Pittsburg and Lake Angeline Company is next in age, to wit: about three years. Then follows the New England, Washington, Cascade, Iron Mountain and Iron Cliff Companies, none of which I think, have been in operation much over a year. The Washington mines have a magnetic ore, and makes a neutral iron. The Iron Mountain makes what is termed a "cold-short" iron, which has no especial value to mix with the "red-short" ores to neutralize them, thus making a neutral iron. All the others make the "red-short" which is tough and melleable, but in rolling into sheets, &c., cracks up. The "cold-short" is brittle, like steel. The mixture of these, producing the neutral iron, is capable of being rolled, while at the same time it is tough enough for ordinary use. The last-named mine has not yet entered into the business of shipping to any noteworthy extent; has shipped, perhaps, five thousand tons, for test purposes. The parties owning it are pushing its matters forward rapidly, and making a large outlay, to bring it well under way. Besides the companies named above, there are other companies formed, and still others in prospect, to develop good locations owned by parties who intend to work them, but to which no roads have as yet been built. Official information by explorers shows that there are magnetic and specular ores in inexhaustible quantities on the south shore of Lake Michigamme, and south of there in the valley of the Menomenee. This is about thirty miles west of Marquette by railroad. The present capacity for shipment of the various companies now in operation is estimated at about 35,000 tons per year. The prospect is one of a steady increase in this capacity, as, while new mines are being continually opened, the old ones will undoubtedly be worked for many years to come. None have yet been exhausted. The following table will show the general shipping business of the mines here since their first opening:

Year.	Gross tons of ore.	Gross tons of Pig Iron.	Value
1855.....	1,447	——	$14,740
1856.....	11,497	——	92,775
1857.....	26,184	——	209,476
1858.....	31,035	1,621	249,262
1859.....	65,679	7,258	575,529
1860.....	112,898	5,660	736,496
1861.....	45,430	7,970	400,401
1862.....	115,621	8,590	984,977
1863.....	185,000	9,000	1,465,000
1864.....	248,000	12,951	2,396,000
1865.....	178,708	11 674	1,512,262

In the year 1864 one mine only was engaged in shipping ore—namely, the Jackson. In 1856, 1857 and 1859 two mines only were engaged—the Jackson and Cleveland. In 1858 the Lake Superior mine was added to the number; and in 1863 the Pittsburg and Lake Angeline Company commenced its operations. It will be observed that there was a marked falling off in shipments, both in the year that saw the rebellion opened and in that which saw it closed. Thus far, this season, I am informed, the shipments have shown a large increase on the business done up to the same date last year. The blast furnaces of the mining district are six in number. The first in point of age is that of the Pioneer Iron Company, located near the Jackson mines, at Negaunee. Its erection was begun in June, 1857, and blasting commenced in June, 1858. The next oldest is that of the Collinsville Iron Company, at Collinsville, on the Dead River, which empties into Lake Superior,) three miles from the mouth, and about three miles west of Marquette. The third is that of the Northern Mountain Company, at Chocolate, on the shore of Lake Superior, at the mouth of the Chocolate River, and four miles from Marquette. The fourth is the Bancroft Furnace, at Forestville, four miles west of Marquette, on the Dead River. The fifth is that of the Morgan Iron Company, at Morgan, eight miles from Marquette, on the railroad. The sixth is that of the Greenwood Iron Company, twenty-two miles from Marquette by railroad, at Greenwood. The Michigan Iron Company is now building the seventh furnace at Clarksburgh, two miles beyond Greenwood, on the railroad. This Company has its own mine of magnetic ore, and large fields of fine hard-wood timber for fuel. There is a saw-mill also in connection with their business. It is not deemed a paying transaction to ship this magnetic ore, but by smelting it here it will make a superior iron to work up. This they will ship. It is thought they will yet find ore on their lands which it will pay to ship but none has been discovered up to date. The Schoolcraft Iron Company is making preparations also to build a blast furnace at Munising. Some two years ago there was discovered a deposit of silver-lead ore, about six miles north of the iron range, in the primary or azoic formation. Three companies have been formed for the development of this new manifestation of the mineral wealth of this favored region. They are located at different points in the same range, but several miles distant from each other. They are entitled the Holyoke the Lake Superior Silver-Lead, and the Chippewa Companies. The first-named Company is pushing on its work, and all is looking well. It has got shafts down on one level, and adits driven in, and, it is believed, will be prepared to ship ore within the year. The other two companies are working along slowly, and seem to be in a measure waiting to see what will be the result of the operations of the Holyoke. Specimens of the ore which I have seen are very beautiful, and indicate well. The veins show not only the galena rich with silver, but also sulphuret of copper. I am told that it yields about $60 of silver to the ton of ore, as got out. Some rare specimens which have been smelted have also yielded about seventy per cent. of lead. Of copper the yield will be about five per cent., which is well worth securing. The same process separates all these minerals, at no greater expense than would be incurred if one only were sought. The Holyoke Company proposes to smelt the ore at its mines, in little reverbatory furnaces, which are less expensive than iron furnaces. . . . . In another letter, dated Houghton, Aug. 2d, he writes a graphic but very lengthy description of a visit to the Quincy Copper mine at Hancock, in the course of which he says: "Mr, Nobel, the reputed inventor, [A mistake; Mr. Nobel claims only to be the inventor of its *application*, to such purposes as these.—Ed. Jour. of Mining.] of nitro-glycerine, has been visiting this and the other copper mines for the purpose of introducing this powerful explosive agent. M. Nobel assured Capt. Stevens that by this compound, the great masses of copper, upon which gunpowder has no effect, can be sundered. The present method of cutting these masses is a very slow and costly one. M. Nobel is unable to

demonstrate the powers of this compound practically here owing to the Goverment prohibition of its transportation by passenger conveyances." The writer then proceeds as follows: I must here endeavor to give the reader some idea of the ramifications of this copper mine. Let him first imagine a shaft, some eight to twelve feet in diameter, cut straight down through the solid rock with a slight incline, a distance of seven hundred feet. Let him next imagine this shaft crossed repeatedly by tunnels or adits, extending right and left on a level. These levels occur at distances of sixty or seventy feet apart all the way down, and honeycomb the earth in an aggregate of miles. Other shafts like the first are sunk at distances of several rods apart, and ladders lead down them all. Beside the shafts, there are what are termed winzes—perpendicular tunnels which reach only from level to level. Down one of these winzes our Captain led us to the ninth level. This level is about 550 feet below the earth's surface. At one point in our wanderings on this level we were told to look up at the roof. The facetiousness of this request may be understood when the reader knows that the "roof" at that point was some five hundred feet over our heads, the rock having been all mined away to within about fifty feet of the earth's surface. Of course we could see nothing but impenetrable darkness. At another point we came plump against the end of the tunnel, and were confronted by a solid wall. One of our party here endeavored to hammer off a small piece of projecting copper, but his efforts were futile. It looked an easy thing to do, but our guide assured us there was not a steamboat in the West that could haul off that nugget. By the aid of an iron bar and persistent endeavors, however, a smaller piece was got off, which was pocketed in triumph as a souvenir. We had now been something over two hours travelling about these underground roads, and although we might usefully have employed hours more, we were fatigued, footsore and hungry. Capt. Stevens, whose pride is all centered here, expressed his willingness to accompany us for an hour or two longer, but we declined. . . . .

Another letter, dated August 11th, states: The principal working mines in the Keweenaw district are the Ætna, Amygdaloid, Arnold, Atlas, Bay State, Boston, Central, Copper Falls, Keweenaw, North Cliff, Pennsylvania, and Pittsburgh and Boston. The last named is probably the most celebrated mine in the Lake Superior country, and one of the oldest. It is the one which created such sensation this month by making the first copper-mine dividend that has been made in some two years. It has made the largest amount of dividends of any of the copper mines—a sum considerably exceeding two million dollars. The Minnesota (in the Ontonagon district) is the only other mine that has exceeded a million in dividends; and this, as I have already related, has seen its former glory wane. The "Old Cliff," however, (by which name the Pittsburgh and Boston mine is universally known hereaway,) still holds triumphantly on its course, still gets out its huge masses of vein copper, and large quantities of stamp-copper beside. Its product, I am told, is about one hundred tons per month. Its largest mass, got out some time ago, was a three-hundred tonner. A mass is now being cut up which weighs something like thirty or forty tons, as estimated. Of course I made a point of going over this famous mine, to see for myself how it looked. There are several shafts, some of which are sunk on the lower ground, and some on the summit of the cliff. I inadvertently stepped on a large trap-door at one place, when my guide nervously warned me off, and communicated the somewhat startling information that the hole under that trap-door was a thousand feet deep. In my ramblings I have frequently been struck by the keen consciousness all the mining people have of the terrible depths that yawn about, and their solicitude lest visitors should take a notion to "just drop in," like Paul Pry in the play, and be converted into jelly. In another place I was shown an old, disused shaft, in a woful state of dilapidation. The rock being limy, decomposes rapidly, and immense quantities of timber are used throughout the mine, to keep the passages open after the vein has been worked out. It is different in the Portage Lake and other mines, where the bulk of the work is in stamp-rock, which is solid, and needs little or no support. The main shaft is on the top of the cliff, about 1,100 feet from its front, and is 1,220 feet deep at present. Here most of the ore is raised, by means of huge iron buckets or skips, running up and down between perpendicular guiding-beams. Thence it is conveyed by horse-cars to the edge of the cliff, and is dumped into a sort of shoot, some 250 feet long, and having an inclination of about 30 degrees, so that the ore simply slides down by its own weight. Thence it passes to the stamp-mills.

After being stamped it passes through innumerable washings, patiently and persistently carried forward, first by machinery and finally by hand, until 40 or 50 per cent. pure copper is obtained, when it is barreled and shipped. It was plainly to be seen that the most extreme care and economy is practiced in this mine, so that everything shall tend to the production of the highest possible per centage. The cliff people evidently take a particular pride in their washing apparatus, part of which was invented by employes here. After undergoing a metamorphosis like that already described in my account of the descent into the Quincy mine, I got upon the first platform of the man-engine, and began to sink down into the shaft, with my candle flaring upon my forehead. I cannot describe the man-engine, and I shall not try. It consists of two perpendicular beams, hundreds of feet long, firmly spliced and ironed, and having platforms at regular intervals just large enough for one man to stand on. The beams pump steadily up and down, and the passenger ascends or descends by stepping from platform to platform at the proper moment, as they come opposite each other. Arrived at the end of the downward journey (the hole is 200 feet deep) we wandered off. I was desirous of visiting the large "mass" spoken of above, and accordingly my guide led me down perpendicular ladders to the point where the mass was being cut. Down a narrow, slightly-slanting tunnel, through which we had to crawl on our hands and knees, we groped our way, emerging presently upon a busy scene. Here lay the huge thirty-tonner, and upon it men were at work, with ringing tools. The process of cutting such masses into blocks that can be raised out of the mine is a very slow and tedious one. A miner holds a long chisel of the finest steel, upon which two other men strike with huge iron sledges; and slowly, chip by chip, the mass is cut in two. Of course, it takes months of steady labor to accomplish the work. The vein (which, as I have explained, runs across the range, and is composed of ore that is fully seventy per cent. pure copper,) varies in size from great spreading masses like this to a narrow line no larger than a lead pencil, and sometimes disappears entirely. The adit is dug alongside this vein, following its course. When a mass spot is reached, it is necessary to excavate a large chamber behind it, and in this chamber are placed kegs of powder by the hundred; as many as seven hundred having been employed in one instance, while a hundred and fifty kegs is a not uncommon "load." The result of this immense blast is merely to dislodge the mass from its place, so great is its resistance. Being dislodged, a platform is built around it, and the miners go at it, conscious of a "big job" on hand for some time to come. The cutting is done by contract. . . . . From what I have seen I should say that there was a good prospect of an improvement both in the copper and iron-mining business, but especially in the latter. The iron ores are beyond doubt existent in almost inexhaustible quantities, and new mines are rapidly being opened. When to the iron and copper are added the silver-lead and plumbago mines (supposing the latter to be successful), it is clear that the future of this region is full of the finest promise. What is most needed now is a railroad that shall connect the upper lake towns with the East more closely; and it is entirely reasonable to believe that one or two of the projected roads will speedily be built. . . . . From the Portage Lake *Gaztette*, of the 16th inst., we learn that the daily product of the Franklin mine was 100 tons 257 lbs (looks like a dividend); Huron, 70 tons 113 lbs; and Grand Portage, 25 tons 1523 lbs.

Nevada.

The Comstock.—From the semi-annual review of the *Mercantile Journal* we learn that the product of the silver mines of the State of Nevada for the half year just closed exceeded $700,000,000—being at the rate of $14,000,000 per annum. The various claims situate on the main Comstock lode are yielding their usual complement of ore, and all the mills dependent upon them for their supplies are kept constantly running, there having been fewer of them unemployed the present summer than usual. The lower levels of these mines, some of which have reached a depth of more than seven hundred feet, are nearly all now developing larger bodies of ore than were met with at the beginning of the year. The expenses attending the extraction and milling of these ores, although of late much less than formerly, owing to better management, is still very considerable. Less than ten per cent. of the entire yield of bullion from the Comstock lode for the first half of this year has been divided among stockholders in the shape of dividends, and a number of assessments have been levied by certain companies. During the year 1865, with an aggregate yield of nearly $15,000,000, the dividends disbursed to stockholders amounted to $1,900,000, and the aggregate assessments levied exceeded $1,950,000. From the mines located at other points in the State the yield has not been large thus far the present year, many of the mills having been idle, owing, it is said, in some cases to an insufficient supply, and in others to the difficulty encountered in treating the ores. Many of the lodes in these outside localities, though apparently rich, have only in a few instances been thoroughly opened—scarcely in any sufficiency to reach permanent bodies of ore; and hence the inadequate supply—many large mills having meantime been erected. With a systematic and thorough development of the mines, of which there are great numbers in these outside districts, there can be little doubt but all the mills now built, and perhaps many more, would be able to find constant and profitable employment. . . . . From the *Enterprise* of July 29th we learn that a new development of good ore has recently been made in the Ophir mine in the eighth level, some thirty feet south of the Mexican line. The vein is said to be well defined and the ore improving. . . . . The rich body of ore developed at the lower level of the Hale & Norcross mine continues to look as well as ever, and yields on an average $155 per ton. It is about 600 feet in depth, extends 200 in length, and shows a width in some places of 30 feet. How much larger the body is will, of course, be found only be further development. . . . Our mines and mills generally are very busily at work, and there probably never was more ore being extracted and reduced than at present. After lying idle for the last two or three years, many of the ledges in the hills surrounding this city are being again worked with a view to their development. This is an excellent idea well followed up. There are undoubtedly ledges here that will pay besides the Comstock, which fact will soon be proven. In the early days of Washoe, when everybody looked for nothing short of $100 ore, the lower grades were passed by, but now that milling and the reduction of ore has become more fully systematized and understood, these poorer classes of ore can be worked to a profit. The Occidental, one of the old claims lying in the hills one or two miles east of this city, is now being actively worked once more, and from it plenty of ore is produced which yields $20 to the ton. There are several more ledges hereabouts fully as good. . . . . The San Francisco *Stock Circular* of Associated Brokers, July 28th, contains the following: Hale & Norcross is in decided favor, and very firmly held. Small sales were made at $1,425, seller 30, closing at $1,500 asked. Advices from different portions of this mine are exceedingly favorable. A connection has been made between the north and south stopes on the 12th floor of the 700-foot level, and in breasting out towards the south, on the 535-foot level, the lode continues to improve. The yield of bullion, from the 1st to the 23d instant, exceeded $100,000, and the aggregate receipts for the month will probably reach $130,000. . . . . Savage is also in better request, advancing from $897½ to $900, and then selling at $950. During the week ending 21st inst., 717 tons of ore were extracted, and 822 tons shipped from the mine. The company have now some $50,000 to their credit, and a dividend will soon be declared for the month of July. . . . . Gould & Curry met with trifling sales at $695@745, closing at $705. The 100-foot level (first station below lower tunnel) is thought to look quite promising, the ore appearing to grow wider, and some portions richer. The quartz on the second station in which the incline is started is said to present favorable indications for a body of ore, but as yet metal has been found only in small spots. If ore should be met with at that point, it would be a new development, and one of importance. Receipts of bullion to the 25th inst. amounted to $93,000, and the aggregate for the current month will exceed $125,000. . . . . Crown Point rose from $715 to $840, and closed at about $850, asked. Improvements to the shaft will be completed this month, and the Rhode Island mill will probably be running on the 6th proximo. From the "croppings," through the old tunnel, at a depth of seventy feet from the surface, 65 or 70 tons of ore are now taken daily. The bullion yield of the company for July will amount to some $50,000, leaving a handsome surplus on hand. . . . . Yellow Jacket rose from $550 to $590, and then sold at $565@$570. The total receipts of the company for the year ending June 30th, last, amounted to $2,072,814. The yield of 53,526 tons first and second-class ore worked, was $1,690,394—an average of $32 50 per ton. From assessments levied $300,000 were derived. The indebtedness of the company June 30th, 1865, was $379,771 55, and their total expenses from that date to June 30th, 1866, amounted to $1,550,127—leaving a balance on hand at the close of the year of $142,915 38. . . . Ophir is in less favor and some $150 feet were dealt in, advancing from $205 to $300; receding to $240, and then selling at $242 50. But little work has been done this week upon ore in the eighth gallery, owing to the timbering of a track connecting the drift with the vein. Receipts of bullion for July will amount to some $50,000—giving a fair profit over all expenses. . . . Chollar-Potosi has been inactive and dull, rising from $184 to $190, closing at $180. The Piute station is said to look as well as formerly. In the northern part of the Bajazette ground ore is being taken down within ten feet of the Hale & Norcross line. This body of ore is 40 feet in depth, and a portion of it of good quality. The Santa Fe station continues to produce some fine ore. The first station drift north from the new shaft, is in hard ground, and progressing slowly. The second station drift, north branch, is in 226 feet, and the south branch, 272 feet. During the week ending 21st inst., 796½ tons of ore were sent to custom mills. . . . Belcher fell from $160 to $140, and closed at $140. Alpha was dealt in at $99@100, and Empire Mill and Mining Co. at $115@$112, the latter closing with more firmness. . . . Imperial met with trifling sales at $91@$90, closing at $91. Receipts of bullion for the first three weeks of this month amounted to $36,809, and the aggregate for July will probably amount to $60,000. A body of low grade ore 40 foot wide, has been found at a depth of 150 feet from the surface, in what is known as the red ledge of the Alta mine, and from the Holmes ground sufficient is being taken to keep the Gold Hill mill constantly at work. . . . . Nearly 3,000 shares of Overman have been sold within a range of $32@49, closing at $36. Confidence fell from $55 to $50 50, and then sold at $55. Bullion was dealt in at $47@49, closing at $47.

Mammoth.—A correspondent writes: The Mount Vernon Company have many valuable lodes in groups, and are running a tunnel that will cut many of their best lodes; also sinking a large shaft on the line of the tunnel for a working shaft, and from the outward appearance of their lodes and ore, under the direct guidance of an able and experienced man, and a cash foundation to work upon, this extensive operation cannot be other than a success. I have visited the Uncle Sam, Josepline, Gould & Curry, Keystone, Ural, Gold Hunter, Sacramento, Stirling, and many other mines, the names of which I have forgotten. The formation in which they are situated is of felspathic granite, and the veins or lodes are the regular fissure veins, averaging from two to ten feet in width, the rock assaying, as I was credibly informed, from $10 to $3,000 per ton, and I would not doubt it from appearances. In this district there is every facility for profitable mining—wood and water in abundance. The mines are situated in the low hills, and easy of access. The best of building stone, fire-proof, within a mile of the mines, and I have yet to visit the district that offers greater inducements to capitalists for investment in mines.

Union.—The Nye County *News* of July 28th, says: The Knickerbocker Mill is now constantly running on ore from the Great Eastern claim, which the Knickerbocker company own. A lot of sixteen tons was crushed last week, which gave a fine bar, valued at $827, being over $50 per ton. This lot was taken just as it came from the ledge, not a single piece of it being thrown away, as it was desired to get a sample of the ledge, and proves that the working of the ore is a success. Another lot of several tons gave a pulp assay of $87. As the mill is running altogether upon ore from this mine, it is supposed that they will be able to work it much nearer the assay than in working small lots—probably ten per cent.—as within twenty per cent. of the assay is as near as any of the mills profess to work. We were shown an assay of rock made by B. W. Crowell, who has charge of the assaying department, which gave the handsome result of $199 45. The piece assayed was picked up at the dump pile by the Superintendent, and is but a sample of hundreds of tons that can be got out. There is a great difference, though, between assaying a sample, and an average pulp assay of several tons. The Great Eastern is an immense ledge, the ore is easily extracted, and two shifts of four men each can keep the mill running, and so soon as the amalgamators and roasters thoroughly understand the

nature of this ore, we may look for great results. The success of the Great Eastern is the success of the Crown Point and General Butler claims, which are on the same hill, and equal in every respect to the Eastern. Could the Crown Point and Butler be placed in the hands of capitalists, and a mill erected upon them, a fortune would surely be the reward of the lucky owners. . . . . A correspondent writes to the same paper: A visit to the Great Eastern ledge and Knickerbocker mill, well paid me for my trouble. My stay at the Great Eastern was short, though I had ample time to see one of the largest and best-looking mines I have yet seen —Comstock not excepted. For me to attempt a description of this mine would be folly. The mine is situated in the southern part of the district, distant about seven miles from the Knickerbocker mill. The ore is the gray chloride species, works between sixty and seventy dollars per ton, and there is enough of it to keep the mill at work for years. On our return we called at the famous Knickerbocker mill, and on nearing the building, as we could not hear the usual noise of the stamps, concluded it was not running. We found it, however, in operation, and so firm and solid was its foundation, and so well constructed, that one could be plainly heard in any part of the mill. This mill, for facilitating work, can be rated second to none in the State. My next stroll was among the mines nearer town. Right here I must say, that in all my travels among the mines of Nevada, I have never before seen so many rich veins on so small a space of ground as I saw in the Ione belt, and in my opinion many districts will be formed before there is one found in which the miners can take out ore and pay $55 per ton for working, and make the money that they can in this district.

Twin River.—At Toyabe City, says a letter-writer, the Murphy mill and mine was the first to attract attention. The mill is a large one, intended for forty-stamps, and will probably be ready for operation by the first of October next. The mine is a few hundred feet from the mill, and has already ore enough out to keep the mill running a long time. I am greatly astonished at the size of the ledges here, and surprised that capital is not more heavily interested in this district. There are many mines of note here that I would like to visit, but cannot for want of time. I might mention the Autocrat group, the Ophir, Leviathan, Phœnix, Marino, Buckeye, Mammoth, and many others. The lodes are large and promising, and will no doubt prove profitable to the owners. Running water is abundant in all the canyons, wood is plenty, and when a road is built over the summit an inexhaustable supply can be had from the west side of the range.

Philadelphia.—In this district, says the *News*, there are nearly two hundred men, all busily engaged upon their ledges, building houses, and making other improvements. A large force is at work upon Buel's mill, which will be ready for operations in about two weeks. Should the ores yield by mill process anywhere near the expectations of the owners, Philadelphia District is bound to equal if not exceed the great Comstock. The ore shown us is equal to the best, and covered with horn silver. We hope this district may meet the expectations of those lucky enough to own "feet" there, in the event of which Nye county will loom up in importance second to no county in the State.

San Antonio.—Here the prospects of the miners are most encouraging. The Pioneer mill, which for some reason became involved, has been overhauled, and was expected to be started at once and will be kept running. Messrs. Courter and Rigby, who are heavily interested, expect soon to have a large force at work. Mr. A. J. Rigby went East recently, for the purpose of securing capital to open their mines. He has been successful in his mission and is soon expected home, when they will commence operations on a large scale, which cannot help but add greatly to the prosperity of the district.

Hot Creek.—Reports from this District continue to be excellent.

Reese River.—The Morgan and Muncey mine has been drained by an ingeniously constructed car, holding 140 gallons. It fills itself rapidly, and from the time of its descent to its return just two minutes are occupied. The *Reveille* says: We anticipate splendid success from the new working of the Morgan & Muncey. Its vein had increased in size from the surface to the greatest depth of the work, where it had emerged from frequent "pinches" to the handsome thickness of three to four feet. The grade of its ore, both chloride and sulphuret, is of the highest character yet produced in the district, and with the aid of capital, and a better system, the mine cannot fail, in our judgment, of being developed into a tangible success. . . . . The same paper says: While in Lundbom's assay office to-day, we saw five bars of bullion obtained from ore of the North River mine, of the following weight, fineness and value: No. 1 weighed 1,025 ounces, was 850 fine, and valued at $1,126 47; No. 2, 1,187 ounces, 845 fine, value $1,297 34; No. 3, 1,047 ounces, 830 fine, value $1,123 26; No. 4, 1,067 ounces, 862 fine, value $1,189 17; No. 5, 555 ounces, 808 fine, value $580. Total weigh, 4,881 ounces; total value, $5,316. The bullion was produced from twelve tons of ore, which yielded the handsome average of $443 per ton. The ore was divided into three classes, which yielded by assay as follows: First class, $1,500 per ton; second class, $458; third class, $585. We learn that the ore was very skillfully and successfully reduced by J. W. Varney at the Ware mill, every pound of the twelve tons having been worked to within fifteen per cent. of the pulp assay.

Black Rock—The Washoe *Eastern Slope* says: The migratory portion of our citizens seem to have become much disgusted with Excelsior, and are with one accord rushing to Black Rock, a section of country that in our opinion offers a thousand fold larger inducements than even Excelsior did. Ledges of unlimited extent, broad and easily worked, paying from top down an average of the rock not less than fifty dollars per ton, exceeds any discovery heretofore made in the mining world.

Colorado.

From the Black Hawk *Journal* of August 7th, we collate the following: Mr. C. W. Aldrich has rented the Bates-Baxter mill at Mountain City, encouraged by his success with Dickerson's. . . . . Mr. Morse, for the Gold Rock Company, is sinking on the Mammoth Lode, at the rate of ten feet a week. At 100 feet from the surface he has a crevice between walls seven feet wide with five feet of pay dirt, worth ten to twenty-five cents a pan. . . . . Captain Cox, for the Benton company, is setting up a large engine and putting in a six-inch pump. His shaft at the mouth of adit, right in Packard gulch, is 60 feet deep, has 14 inches solid ore, which yielded $108 a ton in gold per Lyon's smelting furnace. The cross courses let in so much water that it has been impossible to mine to advantage. . . . . We heard yesterday the result of an assay of Fiske ore made by Mr. B. Herman before he left for Swansea. The way it was done was to select several pieces of ore so as to average the whole, pound it up fine, divide with a knife into four parts, and assay each. The average of the four assays is considered the average of the ore. Well, an assay made in this way, showed the Fiske ore to contain at the rate of 17 ounces of gold and 33 of silver per ton, $316 15, coin value. The Sterling Company are preparing to work their Fiske property. The Bobtail is said to have assayed, by this method, more than twice as high as the Fiske. . . . . While in Denver last week we were shown some of the metal from the Bohemian Company's furnace at Georgetown. It had the true silver ring to it. Mr. Walley told us that from their second run of 900 pounds of ore they got 300 pounds of this metal, which a mint assay demonstrated to be worth a little more than $3,000 a ton. This is at the rate of $1,000 a ton of the ore. Steps have been taken to build a wagon road from the lode to the reduction works. The capacity of the furnace is a ton per charge, probably four charges a day. No fluxes are unnecessary. With regard to the slag, it is not entirely cleared of metal; that is to say, some of it is not, and this is thrown aside to be worked over in some sort of slag furnace. It must be acknowledged while they get $1,000 a ton for the ore it is of little consequence that they don't perfectly clean the slag. We do not in the least doubt the truth of the statement in this case, but the furnace must run a while before it can justly be considered demonstrated that the silver ores of Georgetown, Argentine and Snake river are worth, by a rude method of smelting, $1,000 a ton. This year will doubtless determine it to a great extent. . . . . From the Denver *News* we learn that the mines of Bear river do not pay. Statements are to the effect that five men with a sluice succeeded in taking out fifty cents by working one week. Another sluicing party of about the same number were not quite so lucky, getting only forty-three cents in return for a week's labor. Many of the miners are on their way back thoroughly disgusted with the country. The gold is of fine quality, and has a beautiful color. Not over fifty dollars has been taken out of the mines by the whole force there at work, numbering not less than seven hundred men. The lodes, if any exist, from whence the gold comes, have not been discovered. There are some few persons who yet have hope in the mines, but the great majority are leaving, and "grub" at Bear river is much cheaper than anywhere else in Colorado, as the miners do not care about bringing back any more of the supplies carried in, than may be necessary to provision them for the journey. . . . . The *Register* learns that the damage done in Lake gulch, by the late flood, was not so great as at first appeared. The Pleasant Valley Company have a large number of hands at work removing rubbish and placing their works in their former condition. It is thought the entire loss will not exceed twelve thousand dollars.

Montana.

From the Virginia City *Post* of July 28th, we take the following: Mr. Hall, on Sunday last, took out of his bed rock flume, on No. 11 above discovery a nugget weighing $400 95. Work away, miners, there is plenty more of the same sort, waiting to be turned up by the lucky finders. . . . . We noticed passing through our streets, yesterday afternoon, machinery for John How's 24 stamp mill, at the Summit. . . . . Prospectors, some time ago, stated that coal and iron could be found 15 miles west of Virginia City, but gave no idea of their extent or richness. During the past week, Professor Henke of this city, accompanied by Assessor Everts, has spent several days in exploring this region. His reports are highly satisfactory. Within a distance of five miles, he found coal, iron, slate, and several quarries of sienite. Of the extent of either of these products, the Professor is not yet prepared to speak, but he was so well pleased with the indications that he has concluded to spend some time in making further explorations. We have seen specimens of the coal and iron. The coal burns freely, has a brilliant fracture, and when subjected to the blow-pipe, emits a bituminous odor, similar to that of the coal of Western Pennsylvania. The width and extent of the veins it is, as yet, impossible to determine, but we learn that they have a good cover of slate, and can be worked by drifting with success. The iron ore exhibited to us, was equal to any we have ever seen, in weight and purity. It is believed that there is a very large mountainous deposit of this mineral in the immediate vicinity of the place where the specimens were found. Iron is found in all parts of the territory, but no explorations have yet been made to determine its extent or richness in any one locality. Slate is equal to the best that is found in Vermont and New Hampshire, and exists in very large quantities. If so, it can be afforded at prices much under those that we now pay for shingles. A more valuable or useful article, in the future growth of our territory, will hardly be found in it. The sienite is very pure, possessing the three components, mica, hornblende and felspar, and exactly resembling in color the purest specimens of Massachusetts sienite. The quarries are inexhaustible. As this locality is easily made accessible by a good road, the time may not be very far distant when we shall see some of the primitive buildings of Virginia superseded by more beautiful structures of this material. In the springs, in the vicinity of the coal deposits, we are told, there are indications of petroleum. This article will undoubtedly be found, if the coal proves as extensive as is now believed. . . . . A letter from Deer Lodge, July 20th, says Elk Creek has depreciated somewhat in the estimation of a few lately, but chiefly on account of the failure of water. Bear gulch presents quite an animated appearance, and a large amount of work is being done in the development of that place. Henderson and Harvey gulches are proving very good, and quite recently some new discoveries have been made in the vicinity of the former creek. It is said there now one thousand men at the new diggings. They are reported to pay well, and are very shallow, being only from two to three feet to the bed-rock. Silver Bow, Butte City, and Oro Fino, are all better camps than ever before, and a large number of men are being employed at those places. There is in course of construction at the former place two ditches for the purpose of taking water from the eastern slope of the Rocky mountains to the western, one of which is from Boulder and the other from Divide creek.

Oregon.

The Dallas *Mountaineer*, of July 20, says:—The mines on Eagle Creek are paying well. Miners are making from four to fifty dollars per day. The quartz mines are also turning out very rich, and a mill is now on the way from New York to that locality. Grand Ronde Valley presents great inducements to men of energy. They can obtain employment at either mining, farming, or teaming—all of which pay very good wages. The stages for Idaho are making daily trips through Uniontown. Altogether, Baker is one of the most flourishing counties in Eastern Oregon. . . . . For several months past a company has been engaged in opening claims on ths main John Day River, about ten miles this side of Canyon City, and about a mile above Beach's old ranch. The company have stripped a piece of ground some fifty feet wide, one hundred and fifty feet long, and from ten to twelve feet in depth. From a few inches to two feet of pay-dirt is left to be washed up, and the handsome average of one ounce a day to the hand can be made. For years past prospectors have found gold in this neighborhood, but the considerable expense attached to opening claims has induced them to seek lighter but less lucrative diggings. This test of the capacity of the main John Day to furnish good paying employment for a large number of men, has induced a considerable number of men at Canyon City to take up ground on that stream. Diggings of this character were found on Bois Basin, the year of the discovery, and until 1864 attracted but little notice, but afterwards were worked with steady and very great profit. The same will doubtless be the case with these diggings. The gold in the new discovery is what is commonly called "wheat gold," and assays about $18 an ounce. It is easily saved without quicksilver.

British Columbia.

The Vancouver Island *Colonist*, of July 10, contains a trustworthy letter from French Creek, which says:—The mines, you must know before now, have not turned out as we expected; that is, they are not shallow diggings. Neither are they easily worked. On the contrary, though not so deep as Cariboo, they are expensive; and the working of them is attended with much labor, caused in a great measure by the number and size of the boulders that have to be handled. So far, however, we have no reason to doubt their richness. Of course, with such an unusually late season, we were all too early in the field. Those who have returned, giving such wretched accounts of the country, in most instances have never seen it; while others who came to the mines were obliged to leave from want of means, scarcity of provisions, and the quantity of snow on the ground, which rendered prospecting an impossibility. Again, those who had claims have been unable to prospect them to any advantage, owing to the high stage of the water in the creeks. Thus one may say that we are in possession of little more information than we had last fall. Nothing could be more dull and dreary than it has been so far; but I really think we have seen the worst of it. Some eight or ten companies have commenced to take out gold within the last week, and at least as many more will be at work within the next ten days, and every man who has got a claim is sanguine. The lead has been tapped in this creek along a distance of a mile and a quarter from the town. This gives them redoubled confidence and courage to persevere. On the other hand, I cannot, at the present moment, see that we have any immediate reason for supposing that our gold fields at Big Bend will be very extensive; for the simple reason that we have not a sufficient number of men to push out extensive prospecting. But a discovery at any moment would, from the accessibility of the place, bring back most of the men we have had here this sprng. As it is, a very large amount of money will be taken out of the two creeks that are being worked (McCulloch's and French). The poor fellows who have been here this season deserve all they get, for they have had a hard time of it. I have known whole companies live for weeks on flour and beans, and very little of that. . . . . The same paper, of July 10, says:—There is a very perceptible improvement in trade since our last date; but still business is by no means lively. Many persons have returned from the Big Bend mines disappointed at finding the diggings neither so shallow nor so easily worked as some accounts have represented, and the consequence is that they speak disparagingly of the mines, which naturally throws a shade of anxious uncertainty over the minds of merchants shipping goods in that direction. Although these diggings turn out to be deeper than was at first expected, it is a fact well established that there is gold in good paying quantities; but whether it is as widely diffused as previously stated, remains yet to be proved. By late advices we learn that 500 ounces of gold were shipped by steamer down the Columbia from that locality. All the latest

accounts from Cariboo District speak confidently of the promised yield from the various new creeks in that section of the country, and augur well for good returns being made this season.

Original Papers.

WRITTEN FOR THE JOURNAL OF MINING.

MINERALOGICAL SKETCHES OF THE COUNTIES IN SCOTLAND—No. 1.

By H. Dessauce, Professor Ind. Chemistry to the French Polytechnic; Chemist to the French Imperial Laboratories, etc., etc.

The hills of Scotland lie in general from east to west, and the glens, rivers and arms of the sea take a similar course. The mountains are like those of other countries—precipitous on their western, but sloping on their eastern side. The most distinct general feature in the geology of Scotland is that which arises from the immense bed of coal which extends across the whole country, passing under rivers and hills, till it is lost in the sea. This bed commences in Fife, and skirting the foot of the hills, it passes through Kinross, Clackmannan and Stirling, keeps to the south of Campsie Hills, and terminates in Dumbartonshire, unless we consider the coal of Arran and Campbelton to be a continuation of it, since they all lie on the same direct line. From Renfrewshire, Ayrshire, etc., this coal is found again to have a southern limit, beyond which it is never met with. This large tract of country is found to possess bituminous shales, greenstone, sandstone, ironstone, limestone and trap in great abundance, in which many of the precious minerals are occasionally discovered. To the north of the Ochills again no coal has been discovered, except in small portions at Brora, in Sutherland; and, as the coal terminates at the Ochills, so the sandstone is found to terminate at the Grampians. Here granite, gneiss and other primitive rocks abound; while the lime, which is found in some districts, is in some measure useless for want of fuel. The rocks are but little quarried in this large tract of country, except at Aberdeen Portsoy, etc., where granite is wrought, and at Assynt, etc., where beautiful marble is dug up and exported.

ABERDEENSHIRE.

The Aberdeen granite, so much used in London, is prepared abundantly at five miles N.W. of the city of Aberdeen; at Peterculter, seven miles to the W.S.W. of it; in Chatt parish, Killdrummy and Meldrum; limestone at Frazerburgh, Ythau, Aberdeen, Cults and Cabrach; marl at Cults; marble is quarried at Leithhall; freestone is found at Craighall, in Kennethmount parish; ironstone at Monymusk, but not wrought; millstones are made at Aberdour, and quartz is shipped thence for the glassworks at Newcastle; slate at Culsalmond; a vein of manganese is wrought near old Aberdeen; plumbago in Huntly parish; topazes, rock crystal, amethyst, beryl and garnet at Cairngorm, Crathy, Loch-na-garaiah, etc. A single topaz found in this county weighs 18 ounces. Fluor spar with galena, rarely met with in Scotland, is found at Monaltree; andalusite at Kinnaird Head, tremolite and actynolite in dolomite; kyanite in the primitive rocks at Bauchary; molybdena and agates at Peterhead; small portions of sphene in the Aberdeen granite; green amyanthus in Leslie parish; and amber is said to be occasionally found near Buchan. The dropping cave of Haines, 16 miles north of Aberdeen, furnishes curious incrustations and petrifactions.

ARGYLESHIRE.

Kintyre and Cowal consist almost entirely of mica slate. North of the isthmus, at Tarbert, commences the chlorite slate. Isla and Jura consist principally of quartz rock. In Isla, lead, copper and manganese ores are wrought. Limestone is abundant in Cairndow, near Dalmally, Tarbert, Mull, etc. The Lysmore and Tyrie marbles are well known in commerce. Curious beds of slate and pudding-stone are found near Oban, in which are jasper, rock-crystal, shorl, garnets and topazes. Cubical pyrites in the slates of Balahulish and Casdale, which are wrought to an immense extent. Between Inverary and Dalmally occurs porphyry, with crystals of black shorl, schists and limestone. Seven thousand tons of coal are dug annually at Campbelton; granite, trap, micaceous schists, limestone, freestone and coal at Mull. The coal lies both above and below basalt. At Strontian, strontites, creuzite, heavy spar, calca. spar; at Port-na-curaich, in Iona, steatite, asbestos, dolomite, serpentine, tremolite, actynolite and pystachite, in red feldspar and quartz; lepidulite (very rare) in Dalmally, Ballahulish and in limestone opposite Cairdow Inn. At St. Catharine, lapis ollaris. Crinan is remarkable for its grey wacke and grey wacke slate; black talc in Colonsay. The scientific traveller will find scope for his learning when contemplating the strata from Craignish to Appen, the quarries of Easdale and Ciallahulish, the quartz paps of Jura, the Gulf of Curryvrechan, the island of Iona, and the gigantic and far-famed pillars of Fingal's Cave in Staffa.

AYRSHIRE.

From Ayre, Troon, Irvine, etc., above 100,000 tons of coal have been exported in a year, independently of internal consumption from the numerous population and public works of this country. Coal, limestone, freestone, ironstone, in almost every part; cannel coal at Craigie, glance coal at Riccarton; sandstone, with petrified wood, at Swinridgemuir; water-of-Ayr stones are well known for giving an edge to steel; amygdaloid, red sandstone and pitchstone to the south of Muir Kirk; basaltic dykes at Great Cumbrays, Largs, Stevenson; Ailsa is basaltic and columnar; lead at New Cumnock, four miles from which is a coarse graphite; steatite and heavy spar at Eglesham; prehnite and cubicite at Beith; fibrous gypsum at Cumbrays; pisiform clay and ironstone at Galston; kyanite at Ballantræ in serpentine; at Drongan, in Stair parish, are water-of-Ayr stones, black lead, copper and antimony; durable millstones have been wrought at Comlechill, in West Kibbride, and at old Cumnock, in a lime quarry, with many curious shells, and containing a small vein of lead ore.

[WRITTEN FOR THE JOURNAL OF MINING.]

SALT.—No. 13.

By Francis E Engelhardt, Ph. Dr., Professor of Chemistry in St. Francis Xavier's College.

The strength of the Onondaga brine varies in the different wells during the season from 50 to 76 degrees of salometer at 56 degrees Fahrenheit. The mean strength for the season in 1862 was: for Syracuse, 16.255; for Geddes, 16.163; for Salina, 15.843; and for Liverpool, 14.926 parts of saline matter in 100 parts of brine. The main constituents of these brines were determined by Dr. Goesmann, as far as practical results required, as under, viz.:

	SYRACUSE.	GEDDES.	SALINA.	LIV'P'L.
Sulphate of lime...	0.5747	0.5747	0.5873	0.5234
Chloride of calcium.	0.0795	0.0795	0.0827	0.1037
Chlor. of magn'ium.	0.1449	0.1499	0.1316	0.1336
Peroxyd of iron....	0.0029	0.0012	0.0021	0.0010
Chlor. of sod. (salt).	15.3570	15.2027	14.9443	14.1483
Saline matter.....	16.3570	16.0030	15.7480	14.9100
Water.....	83.8410	83.9970	84.2520	85.0900
	100.	100.	100.	100.

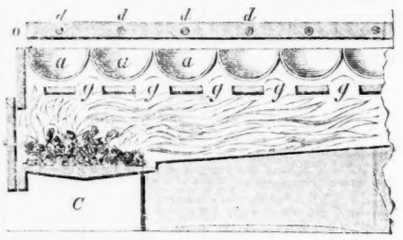
According to these analyses, 288.05 lbs., equal to 36.06 gallons of 8 lbs. each, of the Syracuse brine, are required in producing one bushel of salt of 56 lbs.; of the Geddes brine, 288.99, equal to 36.25 gallons; of the Saline, 297.46 lbs., equal to 37.18 gallons; and of the Liverpool, 319.18 lbs., equal to 39.899 gallons. The impurities in the brine compared with the salt in the four wells are

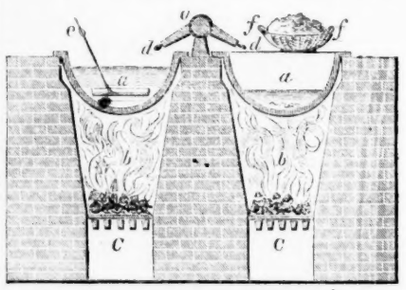
IN THE SYRACUSE.	GEDDES.	SALINA.	LIV'P'L.
Salt..... 15.2027	15.2027	14.9443	14.1483
Impurities.... 0.8020	0.8003	0.8037	0.7617

of which, as analytical results show, the greater part is gypsum, a comparatively harmless admixture. A more complete analysis of an average brine of Syracuse, in 1864, is the following (Goesmann):

Sulphate of lime	0.5772
Chloride of calcium	0.1533
Chloride of magnesium	0.1444
Chloride of potassium	0.0109
Bromide of magnesium	0.0024
Carbonate of protoxide of iron	0.0044
Chloride of sodium (salt)	15.5317
Water	83.5347
	100.

besides traces of carbonic acid and iodine. The salometer showed 65 degs. at 70 degs. Fahrenheit, and the specific gravity was 1.225. There are two methods employed in this district in manufacturing salt. About one-third is produced by solar evaporation in the so-called "solar fields," of which I shall speak hereafter, and two-thirds by artificial heat. The artificial evaporation used follows the old system, being the so-called "kettle" evaporation. Large cast-iron kettles, of 100 to 120 gallons capacity, are set in two rows, close together, fixed in brickwork, as indicated in the diagrams. (*a*) represents the kettles. There are between





20 and 30 kettles on each side; together, they form what is called a "block" On one side of the block are the fires, as seen at (*b*) and (*c*), one fire for each row of kettles, which are separated one from the other by a brick wall. The fires enter from opposite sides of the block, and pass into the same chimney. To protect the front kettles, or those more exposed to the direct action of the most intense heat, thin, brick arches are constructed at a short distance below the bottom of the first eight to ten kettles in each row, as indicated by the letter (*g*). The flame is thus prevented from striking the bottom of the kettle directly, being made to pass first through the spaces left open between the arches of two kettles. Each block is provided with a large wooden tank, elevated a few feet above the kettles, and capable of holding sufficient brine to supply the kettles during 24 hours. They are called "settling vats," since in them this process, of which I spoke in the previous number, is accomplished, by the addition of slacked lime, alum, or clay. Connected with this settling vat is a wooden, hollow log, or pipe, which runs above the two rows of kettles at (*o*), supplying each kettle with the necessary brine through the short wooden faucets (*d*). At (*e*) a large iron frying-pan—16 inches diameter, 3 inches deep—is represented, which is provided, nearly in its centre, with a long vertical iron handle. At (*f*) a salt basket is seen resting on two narrow pieces of wood on one side, above the kettle, to receive and drain the salt after it is formed. When the operation is commenced, the inside of the kettles are first slightly covered with powdered quicklime, and after being heated to a moderate temperature, are filled with brine from the tank. The evaporation then begins. As the brine is not saturated, some time elapses before the solid matter separates from it. The first substance precipitated (if I may so express myself) by the evaporation is the gypsum, since this substance, as is well known, is less soluble in a concentrated than in a weak brine, a fact due partly to an increased percentage of the chlorides calcium and magnesium; thus, for instance, the Syracuse brine contains, according to analysis, 0.5706 per cent. of gypsum in its natural state. At the point of saturation, it was found to contain 0.4422 per cent., and, after eight days' constant boiling and renewing of the brine, 0.1211 per cent. of gypsum. The next substance that separates is the salt; and we find, after the operation is ended, in the remaining liquid—"the mother liquor"—besides salt, the chlorides and sulphates of magnesia, lime, etc., if they were originally present in the brine. The gypsum separates in the form of a fine crystalline and mostly an-

hydrous powder; and since the kettles are hemispherical in form, and the heat is applied to the bottom and sides, the brine necessarily rises along the side walls and descends in the centre, carrying with it the suspended particles of gypsum or other impurities. To collect these, the salt-maker places in the centre of each kettle, after filling it with fresh brine, one of the before-mentioned pans, which is emptied as necessity requires, and finally taken out when the violent boiling begins. The amount of gypsum separated thus from the brine is 1 lb. 10 oz. from 60 gallons (Cook) As may be presumed, the boiling in the front kettles is more violent than in those towards the end of the row. The evaporation of the liquid is subsequently continued till about 16 to 20 gallons remain when the salt formed is scooped out into the basket, and after being sufficiently drained is emptied into the "salt bin." The kettles are then again filled with new brine, and the same process is repeated. The salt, according to the State law, must remain for two weeks in the bin, for further drainage, after which it is packed into barrels, each holding about five bushels, and is ready for the market. This salt is known under the name of "Syracuse fine salt," or "boiled salt." Its average composition is sulphate of lime, 1.2550; chloride of calcium, 0.1550; chloride of magnesium, 0.1369; moisture, 3.000; chloride of sodium (salt), 95.4531 in 100 parts (Goesmann). Notwithstanding the collection of gypsum made by the pan process, the insides of the kettles are gradually coated with an incrustation called "blocking," consisting mostly of gypsum and salt, caused by the violent boiling. It increases more or less rapidly according to the time and management of the operation, frequently becoming, after 10 to 14 days' work, several inches in thickness, and thereby causing a great loss of fuel. The time during which a block is constantly working, varies from 6 to 12 days. In order to clear the kettles of "the blocking," the fires are extinguished, and the kettles allowed to cool, after being filled up with fresh brine, which aids considerably in the subsequent cleaning by means of crowbars. During the time of boiling, persons visiting the salt block will always perceive an acid smell, especially over the kettles which boil the more violently. This proceeds from the hydro chloric acid, and sometimes from chlorine gas, due mainly to the decomposition of the chloride of magnesium into a basic salt, in consequence of the intense heat. The entire salt block, with the exception of the settling vats, is covered by a wooden shed. The two rows of kettles occupy the middle of the building, and the salt bins are arranged on each side of the latter, with a space of about six to eight feet between each. Frequently two blocks of kettles are under one roof. This is called a double block.

[WRITTEN FOR THE JOURNAL OF MINING.]

LEAD FIELDS OF THE UPPER MISSISSIPPI—No. 9.

FORMATION OF STRATIFIED ROCKS.

By J. VANCLEVE PHILLIPS, M.E.

DUBUQUE.

The rock known as the Potsdam sandstone, is 500 feet below the Mississippi river at Dubuque. In boring an artesian well on Main street, the strata penetrated would be as follows: 20 feet of sand and pebbles, 20 feet of lower galena limestone, 60 feet of blue limestone, 30 feet of buff limestone, 120 feet of upper sandstone, 250 feet of lower magnesian limestone, 500 feet of Potsdam sandstone. This is a crumbling, calcareous rock, and covers large areas in Northern Wisconsin and Minnesota, the altitude there being 500 feet above the Mississippi river at Dubuque, making the dip towards this point about 1,000 feet. This sandstone carries a fossil known as a *Trilobite*, a marine animal that lived in one age of our globe in an ocean, was laid down upon its floor and fossilized in sand and lime that was being deposited, forming this rock. From this it will be seen that at one age of our globe, 1,000 feet below where the city of Dubuque now stands was the floor of an ocean. And from that level, for 600 feet above the present site of this town (600 feet having been abraded), all the rock was formed on the floor of an ancient ocean, commencing on the floor of this sandstone. The family of the *trilobites* have their oldest burying-grounds in this rock. Each stratum of limestone, sandstone and shale piled above, has its tombs of fossils, showing an outline of the animal life that swarmed in these oceans during each particular era in which the rocks were being laid down. Here commences the early history of the stratified rocks. And the business of the geologist is to take these strata as the pages of a book, and study out a history of the condition of the surface of the planet, as it was when these families of organic life made their entrances and exits, and played their parts in the great drama of the early life of our globe. The reader may ask how does the geologist know about the depth of this rock below Dubuque, and about the floor of this ocean that was once 1,000 feet below the present level of the Mississippi river? As follows: In Belcher's well, at St. Louis, bored 2,200 feet deep, an exact scale of the rocks was made as the boring progressed. At the depth of 1,800 feet, this Potsdam sandstone was penetrated. Going south from St. Louis, in the Iron Mountain region, this rock rises to the surface of the country. At Lake Pepin, on the Upper Mississippi, this rock had dipped south, and gone down 500 feet below Dubuque, and going south, has further dipped, and is 1,800 feet below St. Louis, and comes to day at the Iron Mountains in South Missouri. We might now proceed to trace this rock along the Ozark range, through Kansas, where it has gone down from four to 5000 feet below the great basins of the coal measures, and again comes to day along the eastern flanks of the Rocky Mountains. At St. Paul's, it is several hundred feet below the falls of St Anthony; shingles up the sides of the trap ranges of Lake Superior; is 1,500 feet under Chicago; shingles up along the west slopes of the Alleghanies, and comes to day in the State of New York. Wherever this rock comes to the surface, along the edges of the great basin of the stratified rocks of the valley of the Mississippi, this trilobite and its contemporaneous fossils, that are among the "oldest inhabitants" of our globe, are found in their tombs of lime and sand, having been laid down in the slime and ooze on the ocean's floor, and their outlines there preserved by a process far superior to that used to embalm the kings of Ancient Egypt. The Mississippi river has cut its way 300 feet in this rock about Lake Pepin. Coming south, newer strata come in above, and form the vertical wells or bluffs along the river, for 200 miles south—these being less and less steep and abrupt from that point to Cairo. It may be asked what was the condition of the surface of our globe at the time the trilobites lived and sported in the waters of an ocean that had its floor at this depth below the present surface of the country? We must suppose that this ocean was being supplied by sedimentary matter, transported by rivers from the wearing down of continents—similar to the sedimentary matter now daily carried out of the mouths of the Mississippi, Danube, Rhine, and other great rivers that are carrying out and spreading sediment over the floors of our present oceans. It is known that the central part of the Atlantic ocean is a *plateau*, covered with about 2,000 feet of water; that the deep waters are along the shores of the ocean. The Gulf Stream follows a valley 100 miles wide and 10,000 feet deep. This runs parallel with the western Atlantic coast. Beyond this rises the plateau, which reaches to within 100 miles of the opposite continent. This Gulf Stream is a river in the ocean. The sediment carried out of the mouth of the Mississippi river to the Gulf of Mexico is there drawn into the Gulf Stream, and swept north and east, and carried out in a vast eddy in the central part of the Atlantic, and there, in comparatively still water, this sediment is being deposited, and in this way is being formed stratified rocks. Suppose we go back to the time when the deep cuts were being made by the Mississippi river about Lake Pepin, in this Potsdam sandstone, we shall find that the sedimentary matter that was being carried out of the mouth of the Mississippi river and transported by the Gulf Stream, was principally sand—the proper material to form on the floor of the Atlantic a stratum of sandstone. Suppose we consider this sedimentary matter about the time the coralline limestone was being cut down between the Sinsinawa mound and the table lands of Iowa, six hundred feet along this line has been removed, and we shall see that this Gulf Stream is carrying our the proper material to lay down a stratum of limestone on the floor of the Atlantic. Suppose we consider this sedimentary matter when the clay shales of the coal measures are being worn down along the valley of the Ohio and opposite St. Louis, we find the Gulf Stream supplied with material to lay down a stratum of shale on the floor of the Atlantic. We will now suppose the basin of the Atlantic raised 2,500 feet, and what do we see? a plateau of dry land 2,000 miles wide, surrounded by deep seas, which are now the vallies of the gulf streams. We will suppose this plateau commences to be abraded to form vallies and ridges, and the sedimentary matter that is worn down from the land is deposited in these seas; that they are gradually filled up; that the salt water of the seas, by continual dilution of the streams from the land, loses its saltness, and these seas become lakes; that these lakes swarm with animal life; that the remains of these animals are buried in these fresh water deposits; that the strata of limestones, shales and sandstones, forming this plateau, are gradually being worn down in a valley and ridge system, these lakes are gradually being filled with sediment and forming a tertiary basin. Now, by following out this process, we shall be directed to an explanation of what is known as the tertiary basin of Nebraska—a north and south range of country filled with the bones of the gigantic animal life that existed on the globe a short time previous to the advent of man. There are many reasons that could be given to support the theory of this being the course of the Gulf Stream that transported the sedimentary matter that was spread over the floor of an ancient ocean, and was being formed into the rock we now call the Potsdam sandstone, and all the limestones, shales and sandstones above it, to the thickness of 5,000 feet. The drift deposits now found in Northern Wisconsin and Minnesota, were the Newfoundland banks of the latter age of that gulf stream. In that early period, navies did not ride upon the bosom of the great deep to founder and go down, with their armature of war, upon the floor of that sea, as would be found by future inhabitants, should the basin of the Atlantic become dry land. The telescope has revealed to the eye of the astronomer solar and astral systems, by which the mind, in contemplating, is carried up to the power and wisdom of the Creator of these stellar worlds. Again, the microscope has revealed in a single drop of water wonders equalling all the mysteries of the planets, showing that in each drop of precipitated rain water was an epitome of all the laws that hold the evening and morning stars in their fixed orbits. So, in geology, the smallest spring branch has its little eddies, and carries down, after each rain, its load of lime and sand, and makes its little plateaus of stratified rocks, where, in a few feet square, can be read a history of all the phenomena of the great rivers that have abraded the vallies of continents and spread the sedimentary matter over the floors of oceans, forming in that way stratified rocks. We discover by these facts that the limestones which we now call the lead-bearing rocks, or lead measures, did not have an existence until long periods of time had elapsed after the Potsdam sandstone was formed; that the lead ores had not yet been filled in veins, when the rocks lay in solid strata from the top of the table lands of Iowa to the top of the Sinsinawa and Platte mounds of Wisconsin; that after this the crevices, and valley and ridge system was formed, and we may suppose that the lead-producing action dates at a comparatively recent geological epoch, from the simple fact that there was no necessity for the existence of lead ore until man had come to have dominion on the earth, and to be conditioned with a mind and wants, making a necessity for the existence of this metal. For to have repleted the veins prior to this period would not have been consistent with the general development or plan of the economic laws that have distributed the coal and iron, as well as lead wealth of this great valley of the Mississippi or basin of the continent.

ERRATA.—In No. 6 of the Upper Mississippi Lead Fields, for "dip of rocks from Mississippi river," 80° read 8°; and for "Mongora limestone," read "Niagara limestone."

AMERICAN
Journal of Mining.
[ILLUSTRATED.]

GEORGE FRANCIS DAWSON,
EDITOR.

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A WORD OR SO TO "OLD MONEYBAGS."

Millions of dollars, doubtless, are at the present moment lying idle in the bank vaults of this country, awaiting favorable opportunity for investment. They belong, in great measure, to the class of men who require *sure* returns before investing; to the men who possess more money than enterprise; who owe their fortunes to some rash but successful venture—and are determined not to lose it—or perchance to their relationship with some departed person. It is a fine thing, of course, to be absolutely *certain* of gains from any operation one embarks in; but ordinarily the American people prefer what may be called the "romance" of business, which necessarily casts its charm over everything of a speculative character; and while we do not believe in currying this national trait to excess, yet we conceive there is something admirable about it, for it is the very spirit of enterprise, and it is this spirit which, when guided by judgment and backed by ample means, makes nations rise to greatness. Those who are over-cautious are in little better plight than those who are rash. Men who stand still in this age of progression are falling behind. They who let their money lie for a "certainty" to come along, will have long to wait; for, as Sidney Smith says, "nothing is certain but Death and Taxes," and the latter are so large and regular that the arrival of the former will probably find the cash-box nearly empty. Hence it is better for all concerned that this hoarded money should come into use—be invested, for instance, in legitimate mining, in metallurgical works, in rolling-mills, in anything, rather than it should lie idle, for we tell "Old Moneybags" that if he does not endeavor to properly use that which God has given him, he will have cold comfort in this world and hot in the next. (See Mat. xxv. chap., 30 v.) On the other hand, let him invest his means in some reasonable undertaking, and he will help to give employment and contentment to hundreds of others as well as himself, besides doing his part as a patriot, desirous of developing the resources of his country, and as a Christian, anxious to make the most of that which has been given him.

The British Iron "Strike."

By the last advices there were only seventy-one furnaces in blast in Scotland, out of one hundred and forty-one. In the north of England there are only twenty-five furnaces in blast; the remainder are either damped down or blown out entirely. Nearly 3,000 men are locked out in that district. Large numbers of the Irish portion of the laborers have already departed for their own country, from three to four hundred having left Middlesborough in one day. The total direct loss, from the stoppage of furnaces and mills, amounts in that district alone to $600,000 per week, besides the indirect loss to storekeepers, house-owners, etc., etc. The Middlesborough *Times* says:

"The belt of furnaces from Easton to Stockton are all extinct, and the huge range of works seem doubly prominent now that they are denuded of all those accessories of smoke and steam, which in ordinary times seem, as it were, to drape them in obscurity. It is the same with the forges and rolling-mills. These too are, all lying idle, and the factories give out none of those clanging and whirring sounds which denote the industry of our operatives and the progress of trade.

Common bar iron can be imported into Middlesborough and sold at a profit, while, on the other hand, the iron masters have been paying for keepers 8s. 4d. to 9s. 8d. per day; chargers, 6s. 7d. to 7s. 6d. per day; slaggers, 4s. 9d. to 6s. 3d. per day; laborers, 3s. to 5s. per day—5s. per day being equal to about $11 per week, considerably higher than the average wages in England, and very much higher than wages in Belgium. If the masters, then, give way to the demands of the trades unions, they cannot compete with the Belgium masters. If they keep their works closed they do not suffer any loss on that account, considering the present depressed state of trade; but the probability is that when the masters shall desire their furnaces to be again in blast, their laborers will be gone—if to this country so much the better for us.

THE MINES OF MEXICO.

Mexico is one of the richest mineral-bearing countries on the globe, but owing to the sad conflicts that have during the past half century devastated her provinces and decimated her population, her mines, during that period, have, as a whole, been very disadvantageously worked. In this respect she is more unfortunate now than ever. Silver mining in the rich States of Sinaloa, Sonora, Chihuahua, Durango, Guadalajara, and Zacetecas, has been almost wholly stopped by the guerrillas and contra-guerrillas, and it is only a few days since we heard that great apprehensions were felt touching the safety from attack of the very rich mines in Queretero and Guanajuato. However, with the re-establishment of the legitimate authority, old mines will be re-opened, new ones will be found, and the work of development proceed. Recent events seem to indicate that the day of deliverance is near at hand. The attempted paper blockade of Matamoras on the Atlantic and La Paz and other ports on the Pacific; the proclamation of President Johnson "disallowing" such blockade; the failure of Carlotta's mission to France for more troops; and the perturbed condition of Europe—all point to the speedy withdrawal of the invaders from Mexican soil. Then, if Juarez, Ortega, Santa Anna and other chiefs can agree upon one legitimate chief of the Republic, all will be right, and the happy day will have arrived for English and American capital to pour into and develope to their full extent the wonderful mineral resources of that beautiful country.

Comstock Statistics.

In 1865 the "paying" mines on the Comstock lode, according to the *Mercantile Gazette*, yielded $15,000,000, of which only $1,950,000 were divided among shareholders. In the same year the assessments on the non-paying mines of that lode reached $1,950,000, being $50.000 more money expended than was returned as profits. The first six months of this year the same mines have yielded $7,000,000, but the aggregate dividends are less than 10 per cent. thereon. These figures are enough to set people thinking. There must be a leak somewhere; either in the management of the mines or that of the mills. To be sure, there has been unwonted activity this year at Virginia City, and all the custom mills have been well supplied with ores, which might tend to a rise in the prices charged for extracting the bullion and a corresponding decrease in profits, but this would hardly account for the fall from 14 to 10 per cent. Besides, 14 per cent. profit is nothing for silver mines to brag of. We should like to hear how the Virginia City and Gold Hill papers account for this condition of affairs.

Prevention of Petroleum Fires.

In addition to the vast quantities of petroleum destroyed lately by fires and freshets in different parts of the country, we have had a fire in our own neighborhood destroying 15,000 barrels of petroleum and other property to the estimated value of $2,000,000. It originated from the accidental ignition of gas by a candle flame in the cabin of a petroleum laden schooner lying on the New Jersey side of the river. Why could not the safety lamps used in coal mines be used to advantage on board ships or in store-houses where petroleum is stowed? And how is it that these vessels and places for storage are not fitted with tanks, such as the Petroleum Fire-Proof Iron Tank Storage Company is provided with? Why have such tanks at Titusville and elsewhere in the oil regions, and not have them at the other end of the route? These matters should be looked into.

Four Millions per Annum in German Silver!

The returns of the British Board of Trade, just published, show that we have imported from Great Britain during the half year ending June 30, hardware to the value of $3,278,000, being over *three times* as much as was imported during the corresponding half of last year, and rather more than one-fourth of all the hardware exports from Great Britain. If this increase were chiefly in the shape of tools and other articles intended to facilitate mechanical industry, we should only regret that our own country was unable to compete with England as a hardware manufacturer; but when we look at the items, and see that no less than *two-thirds* of the amount is for *German silver-ware*, we are mortified at the idea of the immense proportions which the sums annually sent by Americans to foreign

countries for articles of mere luxury, bear to the sums transmitted for necessaries.

Honors to Miners.

The Valenciennes (French) Society of Agricultural Arts and Sciences has announced its intention of annually awarding gold, silver and bronze medals to the writers of the best papers on coal mines and mining. The medals are to bear the effigy of Sir Humphrey Davy, the inventor of the safety lamp. It would be a good plan for some of our New York societies to offer rewards for original papers on all subjects pertaining to mining. We shall be glad to hear of such a move.

A Pestilential Shower.

We learn that one thousand tons of vitriol are annually showered down upon the city of Manchester in England, being a portion of the refuse discharged from her chimneys. We should like to know how much falls upon Pittsburgh and other large coal-burning cities in the United States.

NEW PUBLICATIONS.

CALIFORNIA MINERALS; by PROFESSOR WILLIAM P. BLAKE.

We have received from Professor Blake a carefully prepared annotated catalogue of the principal mineral species hitherto recognized in California and the adjoining States and Territories, together with a list of authors and publications (incomplete) upon the mineralogy of California; also a list of the principal public and private mineralogical and geological collections in California, known to the author; together with notes on the geographical distribution and geology of the precious metals and valuable minerals on the Pacific slope of the United States. "This list" (of minerals), says the author, "is not intended to be of very direct economical value, but rather to show the nature and distribution of our minerals, and to help to arouse an interest in the science of mineralogy among our people"—an object that we believe the pamphlet well adapted to subserve.

ON THE APPLICATION OF DISINFECTANTS IN ARRESTING THE SPREAD OF THE CATTLE PLAGUE; by WILLIAM CROOKES, F. R. S.

Many of our readers in the extreme Western States and Territories are interested pecuniarily in farms as well as mines, and hence will be glad to learn how to provide against the dread cattle plague in case it should ultimately reach them. We have just received from its distinguished author a neatly printed pamphlet—published by J. H. Dutton, Wine Office Court, Fleet street, London—comprising an extract from the Third Report of the Cattle Plague Commissioners, and the report in full of William Crookes, F. R. S., editor of the *Chemical News*, upon this subject. Mr. Crookes' report is exceedingly able. From it and the conclusions of the Commissioners, we learn that there is considerable evidence that chlorine, ozone, sulphurous acids, and the tar acids actually destroy the cattle plague poison; but Mr. Crookes, after thorough practical tests of all, declares that "the most powerful, and at the same time most simple, process of disinfection, would be to use the tar acids as constant liquid and aeriform disinfectants, and sulphur in the form of sulphurous acid, as an additional and occasional agent." The Commissioners recommend the frequent use of carbolic acid, even when no epidemic is raging, because it contributes greatly to the health of cattle by purifying the air of the sheds.

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

How to Manufacture and Use Nitro-Glycerine with Perfect Safety.

EDITOR JOURNAL OF MINING:

SIR—M. Kopp, one of the most learned chemists, has made a full study of the nitro-glycerine, and has indicated to the Academy of Science the process of fabrication which he has introduced in the quarries of Messrs. Schmitt and Dietsch, at Zorn, (Lower Rhine). This process is very practical, and can be employed in similar works. In an earthen demijohn, placed in cold water, he mixes smoking nitric acid, at 50°, with the double of its weight of sulphuric acid in the most concentrated state. In a kettle he evaporates commercial glycerine, free from lime and lead, until it marks 31° after cooling This glycerine must be of a syrupy consistency. He pours 330 grammes (10 ounces) of the mixture of acids into a glass balance, kept in cold water, and runs into it slowly 500 grammes (1 lb.) of glycerine, stirring all the time. The mixture is left to stand for about ten minutes, and is poured into five or six times its volume of cold water, meantime stirring. The nitro-glycerine is precipitated in the form of a heavy oil; it is decanted, washed with water, and kept in bottles ready for use. Its use is very simple. Let us suppose the miner has to detach rocks: At 2¼ or 3 metres distance from the outside edge make a hole of about 5 or 6 centimetres diameter, and 2 or 3 metres deep; with a funnel, place from 1500 to 2000 grammes (3 to 4 lbs.) of nitro-glycerine in this hole. The miner then lets down a little cylinder of wood, fastened on pasteboard or sheet-iron, of 4 centimetres diameter and 5 or 6 centimetres height, which is filled with gunpowder. This cylinder is fixed to a fuse so as to permit its being ignited. The whole is filled with sand, the fuse is cut at a few centimetres from the hole, and lighted. After eight or ten minutes the combustion of the fuse is communicated to the cylinder. The gunpowder takes fire, there results a violent shock of the cylinder against the nitro-glycerine, which instantaneously detonates. The explosion is so sudden that the sand has never time to be thrown away. The whole mass of rock is seen to rise, become displaced, and afterwards comes together quietly without any projection. It is only on near approach that the effect is ascertained; enormous masses of rock are completely displaced, and are ready for removal by machinery. The stone being but little pulverized, there is no loss. With the above quantity of nitro-glycerine 40 to 80 cubic metres of rock could be detached. The economy of the nitro-glycerine, as compared with gunpowder, is two-thirds. To conclude, nitro-glycerine can be safely employed, as it can be manufactured and transported by the process recently indicated by Mr. Nobel, which consists in dissolving it in wood naptha, in which it loses its explosive property, and by simply adding water to the solution, the nitro-glycerine is precipitated, and is ready again for use. H. DUSSAUCE.

PARIS, August 5, 1866.

Coal.—No. 7.

EDITOR JOURNAL OF MINING:

SIR—The coal being now arrived at, and the engines, heap-stead, coke-ovens, etc., being completed, and the quality of the coal determined, the excavation of coal is commenced. It is opened out at first by a pair of exploring drifts a few yards apart, the width, height and direction of which must be determined by the peculiar circumstances of the mine. These drifts communicate with each other at intervals by cross-drifts, for the purpose of ventilation. As they advance forward the cross-drifts are closed by wooden, stone, or brick walling, or by swing doors. By this means the current of air is brought inward by one drift and outward by the otherto the up-cast shaft. In the North of England, where the shaft bottom is properly opened out, these drifts are generally set in at right angles to each other from the shaft, and when they have reached sufficiently far inward from the shaft, others are set away at various angles. It is of great advantage to have these exploring drifts a good way in advance of the working places, as they drain off the water from the coal, give room for the manager to employ any number of men in case of emergency, and enable him to contend against stoppages arising from unforeseen changes in the coal-bed. They also serve for horse roads, water levels, and air courses. Some systems of mining require these drifts to be treble, the center one being employed as a horse road, while the others are for the extraction of the coal, etc

The first system of mining I shall notice is the Broad Face, where the managers try to extract all the available coal by the single process of first working. To make it a success several things ought to be taken into consideration, such as whether the coal is sufficiently hard to bear the pressure of the superincumbent strata, whether the top and bottom be hard enough to prevent the timber penetrating or sinking, whether there be sufficient refuse to support the roads, whether large quantities of water or gas will be produced. In some parts of Scotland this system is carried on largely, but the extent of their mines is far short of those in the North of England. It has occasionally been tried in the counties of Durham and Northumberland, but it is not likely to come into general use, although the managers in those districts have carried it to the greatest perfection, supporting the top by cast-iron posts and square blocks of wood built upon each other, forming a series of rows. A. MINER.

ELK COUNTY, PA.

DIVIDENDS.

The Bullion Consolidated Mining Company of Colorado has declared a third dividend (monthly) payable September 1st, at 19 Lindall street, Boston. Oil companies declaring dividends are: Philadelphia & Cherry Run Co., 2½ cents per share; Spring Run Oil & Lumber Co., 40 cents per share; McElheany Oil 2 per cent.; Glasgow Oil 2 per cent., Pittsburgh; New York & Alleghany Oil Co., 10 per cent., for three months ending July 31st; United States Petroleum Company, 3 per cent. for the month of August; the American Coal Co. of Alleghany county, Maryland, has declared a dividend of 3½ per cent., payable 10th September.

MEETINGS.

Appleton Gold and Silver Mining Company, trustees, etc., 7½ P. M., Sept. 11th; Oceanic Petroleum Company, directors, noon, September 3; Copake Iron Mines Co., 1 P. M., August 29th; Raccoon Mountain Coal, trustees, Sept. 3.

MARKET REVIEW.

FRIDAY EVENING.

Gold opened this forenoon at 150⅝, and by 2 P. M. had fallen to 148⅝. Coin is exceedingly scarce in the market, as high as 1 per cent. per diem is paid by the lender; a single loan this morning of one million cost the borrower, it is said, $10,000. The requirements for customs duties yesterday amounted to $624,000. The steamer from San Francisco this week brought $3,000,000; this, however, is, as usual, almost all in bar. There was also the somewhat unusual arrival of $600,000 from England. The balance at the sub-treasury here is $93,917,157.

The loan market is somewhat active at 5 per cent., with exceptional cases at 6. The cable brings the news of a reduction in England to 7 per cent. There has been somewhat more activity in commercial discounts at 5@7 per cent., rates tending in favor of the lender. Foreign exchange is dull; leading bankers ask 107⅝ for 60 days' drafts on London, and 108⅜ at sight, but the general rates for 60 days' sterling are 105¾@106½; on Paris, 5.33¾@5.28¾; on Hamburg, 35¼@36.

Government stocks have suffered a serious depression since last week, though now firmer. In mining stocks Consol. Gregory has risen from $18 to $19.25. In Rocky Mountain gold there has been some activity, closing at $4.10, a rise from $2.85, the price last week.

Silver—Is selling slowly at 7½c. to 9c. below the price of gold.

Copper.—Prices are unchanged and firm, with small sales.

Iron.—Prices are without change. There is a slight improvement in the demand for consumption. We note sales of 150 tons Eglinton at $45 50. American Pig still very scarce, and the furnaces unable as yet to meet the demand. Price of No. 1 is $48 to $49. Bar iron is also more in demand, but without change in prices.

Lead.—There has been more demand at slightly advanced prices, say $6.80@$7 for German and Spanish, and $6.87½@$7.12½ for English. The quotations in England are £19 15s. for common English Pig; £20 5s. for LB, and £22 10s. for WB.

Tin.—Pig has been in demand and prices are firm.

Spelter—Is in light demand, without change in price. The price in Europe has fallen somewhat, consequent on the more pacific prospects there.

Salt.—The sales include 5,000 sacks ground Liverpool at $1.90. The arrivals are small and prices firm.

Petroleum—Has slightly advanced since our quotations last week, though at present somewhat dull. Sales of crude at 20@21c., in bulk; 27½c., in barrels. Refined is steady and in moderate request. Sales yesterday of 1,000 bbls. SW at 45c.; Light straw to white, 41@42c.; prime light straw to white 43½c. to 44c., and for standard white 45c; free oil 57@63c.

The receipts at Pittsburg from Jan. 1 to Aug. 18 were	903,322 bbls
To same date last year	396,316 "
Increase	507,076 "

THE COAL TRADE.

FRIDAY EVENING.

Foreign coal is scarce. In Domestic there is no change. The last week's quotations are, however, supported. The coal miners of Philadelphia, it is said, will hold a convention in a short time upon trade affairs, and are also talking of suspending operations for thirty or sixty days. The carrying out of such a plan would no doubt tend to keep up the prices of coal, but would be attended with seriously prejudicial consequences.

Coal transported during the week ending July 18, 1866:

	WEEK. Tons.	SEASON. Tons.
By Lehigh Valley R. R.	43,367	...
From 1st January, 1866	...	1,212,714
Same time last year	...	853,555
Increase	...	359,159
By Lehigh Canal	32,810	...
From 1st January, 1866	...	562,143
Same time last year	...	404,759
Increase	...	157,393
Little Schuylkill Coal, from 1st January, 1866	...	174,179
Last year	...	132,612
Increase	...	41,567
East Mahoney R. R., from 1st January, 1866	...	290,124
Last year	...	217,228
Increase	...	72,896

Coal Transported on the Delaware and Hudson Canal.

	For week end'g Aug. 18.	For the season.
Delaware and Hudson Canal Co.	37,023	778,085
Pennsylvania Coal Co.	1,068	14,136
Total tons	38,091	792,221
For same period last year:		
Delaware and Hudson Canal Co.	10,180	432,582
Pennsylvania Coal Co.	343	20,058
Total tons	10,523	452,640

Broad Top Coal Trade—Huntingdon and Broad Top Railroad.

Shipped for week ending Aug. 18, 1866, 4,397 tons
Amount shipped previously this year,

since January 1st, 1666..... 164,364 "

Total amount " " " " " " 168,761 "
Amount shipped to same date last year..... 178,462 "

Decrease..... 9,701 "

Pennsylvania Coal Company.

By railroad, week ending Aug. 18th, 1866. 17,981 06
By railroad previously..... 165,498 18

Total..... 183,480 04 tons.
By canal, week ending Aug. 18th, 1866.... 1,068 16
By canal, previously..... 13,067 18

Total..... 14,136 14 tons.
" by canal and railroad..... 197,616 18 "
" to same date 1865..... 329,419 11 "

Decrease..... 131,802 13-20 "

Pennsylvania Coal Company.

Shipments of Pittston Coal by Pennsylvania Coal Co., were as follows for the week ending August 18, 1866..... 19,050 tons
Previously, 1866..... 178,566

Total..... 197,616
To same date 1865..... 329,419

Decrease..... 131,803

Prices of Coal by the Cargo.

At New York, August 24, 1866

Schuylkill Red Ash by Boat Load	$7 75@	$8 00
" Chestnut, " "	5 50	6 00
" White Ash Lump	7 00	7 25
" Steamboat	7 00	7 25
" Broken	7 00	7 25
" Egg	7 75	8
" Stove	7 75	8
" Chestnut	5 50	6 00
Lehigh White Ash Lump	7 75	8
" Steamboat	7 75	8
" Broken	7 50	8
" Egg	7 50	8
" Stove	7 75	8
" Chestnut	7 00	

Scranton Coal at Elizabethport.

Lump	$6 70@	— —
Steamer	6 80	— —
Grate	7 00	— —
Egg	7 00	— —
Stove	7 50	— —
Chestnut	5 75	— —

Lehigh Coal at Elizabethport.

Lump	$8 00@	— —
Steamboat and Broken	7 75	— —
Egg and Stove	8 00	— —
Chestnut	7 00	7 25

At Philadelphia, August 23, 1866.

Schuylkill Red Ash Prepared	$6 00@	$6 25
" Chestnut	4 25	.. ..
" White Ash Lump and Steamboat	5 75	6 00
" Broken	6 00	.. ..
" Egg and Stove	6 00	.. ..
" Chestnut	4 50	.. ..
Locust Mt. Lump, Steamboat	6 00	.. ..
" Broken	6 00	.. ..
" Prepared	6 00	6 25
" Chestnut	4 50	.. ..
Lorberry Coal	6 25	.. ..
Franklin, (Lykens Valley)	6 50	.. ..
Lehigh Lump, Steamboat and Broken	.. ..	.. ..
" Prepared	.. ..	.. ..
" Chestnut	.. ..	.. ..
Broad Top	5 75	.. ..

George's Creek and Cumberland Coal.

Run of mine, f. o. b. at Locust Point	$5 75@	.. ..
At Georgetown	5 50	.. ..

At Baltimore August 23, 1866.

Wilkesbarre & Pittston W A., wholesale	$7 50@	$7 75
" " " retail	8 50	8 75
Lykens Valley & Sunbury R A.. wholesale	7 50	7 75
" " " retail	8 50	8 75

Prices for Pittston Coal at Newburgh.

Lump, per ton of 2240 lbs	$6 75	.. ..
Steamer, " " "	6 85	.. ..
Grate " " "	6 90	.. ..
Egg " " "	7 00	.. ..
Stove " " "	7 25	.. ..
Chesnut " " "	6 00	.. ..

70 cents per ton additional for delivery at N. York.

Coal Freights.

From Newburgh.

Stamford	$1 00@	..	Greenbush	$ 55@	.. ..
Norwalk	1 60	..	Coeymans	50	.. ..
Bridgeport	1 60	..	Coxsackie	45	.. ..
New Haven	1 60	..	Stuyvesant	45	.. ..
New London	1 75	..	Hudson	40	.. ..
Norwich	1 90	..	Catskill	40	.. ..
Mystic	1 75	..	Saugerties	40	.. ..
Stonington	1 75	..	Barrytown	40	.. ..
Bristol	1 95	..	Rhinebeck	30	.. ..
Newport	1 95	..	Poughkeepsie	25	.. ..
Fall River	1 95	..	Fishkill Landing	20	.. ..
Providence	2 00	..	Cold Spring	30	.. ..
Dighton	2 00	..	West Point	30	.. ..
Warren	2 00	..	Peekskill	40	.. ..
Pawtucket	2 15	..	Haverstraw	45	.. ..
Boston	2 50	..	Sing Sing	50	.. ..
Troy	60	..	Nyack	50	.. ..
West Troy	60	..	Tarrytown	50	.. ..
Albany	55	..	Yonkers	55	.. ..
New York	70	..			

From Georgetown or Alexandria.

To Philadelphia	$2 00	— —	Boston	3 25	— —
New York	2 75	— —			

From Baltimore.

To Philadelphia	$1 75@	— —	Boston	3 25@	— —
New York	2 75	— —			

From Elizabethport.

New York	$ 70@	— —	Portland	2 00@	2 10
Fall River	1 80	— —	Newburyport	2 30	— —
Newport	1 80	— —	New London	1 75	1 70
Boston	2 00	— —	Pawtucket	2 00	— —
Norwich	1 85	— —	Taunton	1 80	— —
Providence	1 85	— —	New Haven	1 30	— —
Norwalk	1 30	— —	Portsmouth	2 25	— —
Middletown	1 75	— —	New Bedford	1 90	— —
Hudson	1 10	— —	Bridgeport	1 30	— —
Lynn	2 35	— —	Hartford	2 00	— —
Salem	2 00	2 10	Albany	1 15	— —

From Port Richmond, Philadelphia.

Reported from the Coal Exchange, Aug. 22.

Albany (& towing)	$1 65@	— —	Neponsett	$2 75@	— —
Alexandria, Va	1 55	— —	Newark	— —	— —
Bangor	— —	— —	New Bedford	2 25	— —
Bath	3 00	— —	Newburyport	— —	— —
Bedford	— —	— —	New Haven	2 25	2 30
Belfast	2 87½	— —	New London	2 25	— —
Boston	2 50	— —	Newport	2 25	2 00
Bridgeport	2 30	— —	Newport, R. I.	— —	— —
Cambridgeport	— —	— —	New York	1 70	1 75
Charlestown	2 50	— —	Norfolk	1 50	— —
Chelsea	— —	— —	Norwalk	— —	— —
Commercial Point	— —	— —	Norwich	— —	— —
Cohasset Narrows	— —	— —	Parkshell	— —	— —
Davenport	2 50	— —	Pawtucket, & tow'g	2 50	— —
Dighton	2 50	— —	Portland	2 75	— —
Dorchester Point	— —	— —	Portsmouth, N. H.	2 75	— —
East Greenwich	— —	— —	Providence	2 25	— —
Fall River	2 25	— —	Poughkeepsie, & tug	1 70	— —
Fredericksburg	1 80	— —	Quincy Point	— —	— —
Gardiner	— —	— —	Richmond	1 90	— —
Georgetown	— —	— —	Roxbury	2 70	— —
Gloucester	2 75	— —	Saco	3 40	— —
Hartford	— —	— —	Saugus	2 50	— —
Hudson	2 00	— —	St. Johns (in gold)	2 00	— —
Hingham and dis	2 50	— —	Salem	2 50	— —
Kennebrook Point	— —	— —	Salisbury	3 10	— —
Lynn, and dis'ge	2 75	— —	Stamford	— —	— —
Malden	— —	— —	Troy	2 00	— —
Marble Head	— —	— —	Washington, D. C.	1 60	— —
Medford	— —	— —	West Chester	— —	— —
Mystic	— —	— —	Weymouth	— —	— —
Nantucket	— —	— —	Yarmouth	— —	— —

FOREIGN MARKET REVIEW.

Weekly Metal Report.

Nos. 1 and 2 East India avenue, Leadenhall street, }
London, E. C., August 10, 1866. }

There is no change of importance in the position of the Metal Market since our last report; prices on the whole have been well maintained, and an average amount of business has been done. Monetary affairs are still very unsatisfactory.

IRON.—The position of Welsh and Staffordshire iron remains the same; orders are very scarce and most makers willing to make concession in price. Scotch Pig Iron has been neglected, price 51s. 9d. cash.

COPPER.—The improvement reported in our last has been fairly maintained. English tough is in steady demand at about smelters' quotations. Burra has changed hands at £84 to £84 10s.; Wallaroo, £84; Kapunda, £86; Chili, in Liverpool, £74.

TIN.—The market is very steady, and business would be larger if holders were more willing to supply the demand. Straits has changed hands at £76 to £76 10s. and £77, and at a proportionate higher price with prompt delivery. Banca, £80. English tin remains dull. The Dutch market is quiet at 46l.

TIN PLATES command full prices, and are in good demand.

LEAD.—A steady market, but not quite so much doing.

SPELTER has further declined in value, with a very limited amount of business. The last sales reported have been at £19 10s. spot here, and at £20 for special brands in outports.

VON DADELSZEN AND NORTH, London.

Oil Trade Circular.

LONDON, August 10, 1866

Considerable activity continues in the London market, and the inquiries in North Wales have been more than for many weeks past; but the prices for Refined Oils—both Petroleum and Coal—have not made but a slight advance. The demand has also been good for Lubricating Oil and Grease. If the Welsh manufacturers were to improve the quality of their black grease a large business could be done, and at remunerative prices.

Refined Petroleum.—2s. to 2. 2d. per gallon.

CRUDE.—Unchanged.

ONCE RUN.—£11 10s. to £12 per ton in London.

GREASE.—£5 to £20 per ton.

PARAFFIN WAX.—3d. to 1s. per lb.

PARAFFIN SCALES.—2d. to 4½d. per lb.

STRANGE BROTHERS & Co., Mold and London.

NEW YORK METAL MARKET.

(CORRECTED WEEKLY.)

COPPER	Ingot..Lake Superior, ⅞ lb., cash	.. 30	.. 31		
	Baltimore	.. 30	.. 31		
	Pig Chili	.. ..	.. ..		
	Bolts	.. 43	.. ..		
	Braziers	.. 42	.. 43		
	Sheathing	.. 45	.. ..		
	Yellow metal	.. 33	.. ..		
IRON	Pig.....No. 1 Scotch, ⅞ ton	47 00	50 00		
	No. 1 American	47 00	49 00		
	No. 2 "	45 00	.. ..		
	No. 2 Charcoal	.. ..	.. ..		
	Bar.....Swedish, ordinary sizes	170 00	.. ..		
	Amer. and Eng. refined	125 00	145 00		
	" common	115 00	120 00		
	Rails, American currency	.. ..	.. ..		
	" In gold	.. ..	.. ..		
	Horse shoe	150 00	160 00		
	Rods 5-8@3 in., oval sq	130 50	185 00		
	Band	155 00	.. ..		
	Nail rods, 5-8 and ⅞	122 50	185 00		
	Hoops	160 00	225 00		
	Sheets, Russian, ⅞ lb	.. 28	.. 30		
	" English "	.. 6¼	.. 9		
	" American "	.. 25	.. 25½		
	Boiler Plates, English	.. ..	.. ..		
	" American	.. ..	.. ..		
STEEL	Best cast in bars, war	.. 26	.. ..		
	Best sheet cast, "	.. 26	.. ..		
	Best cast circular saw plates 46 in	.. 32	.. ..		
	Double shear steel, war	.. 24	.. ..		
	Single " "	.. 23	.. ..		
	Montague & Co. C. S., in bars	.. 23	.. ..		
	Round machinery cast	.. 17	.. ..		
	Best German	.. 17	.. ..		
	Government German	.. 14	.. ..		
	Eagle German	.. 16	.. ..		
	(L.) Blister, war	.. 22	.. ..		
	W. Jessop & Sons, blister, war	.. 20	.. ..		
	Double refined	.. 28	.. ..		
	Stone Axe shapes	.. 28	.. ..		
	Common blister	.. 16	.. ..		
	24 quality sheet	.. 23	.. ..		
	3d quality sheet	.. 20	.. ..		
LEAD	American, per 100 lbs	.. ..	.. ..		
	German	..Gold	6 80	7 00	
	Spanish	"	6 87½	7 00	
	English	"	6 87½	7 12½	
	Bar, per 100 lbs		10 50	.. ..	
	Pipe and sheet		10 70	.. ..	
TIN	Banca Gov., per 100 lbs. gold		20½	21¼	
	Straits		20½	.. ..	
	English		20	21	
TIN PLATES	IC 10-14 prime charcoal		15 50	.. ..	
	IX 10-14 " "		18 50	.. ..	
	IC 12-12 " "		16 00	.. ..	
	IX 12-12 " "		19 00	.. ..	
	IC 14-20 " "		16 50	.. ..	
	IX 14-20 " "		19 50	.. ..	
	IC 14-20 Roofing ch. 1st		14 75	.. ..	
	IC 14-20 " " 2d		13 75	.. ..	
	IC 14-20 " Coke		12 25	.. ..	
	IC 10-14 Coke		12 00	14 50	
SPELTER	Lehigh, per lb., currency		.. 12	.. 12½	
	Foreign " gold		.. 9¾	.. 10¼	
ZINC	Mussulman & Amer		.. 13½	.. 14	
SOLDER	No. 1		.. 24	.. ..	
	No. 2		.. 22	.. ..	
QUICKSILVER			.. 90	1 10	

LONDON METAL MARKET.

LONDON, Aug. 10, 1866.

		£. s. d.	£. s. d.
COPPER	Best selected, per ton	84 0 0	@.. .. ..
	Tough Cake & Tile, per ton	81 0 0	.. .. ..
	Burra Burra " "	85 0 0	.. .. ..
	Copper wire, per lb	0 0 11½	.. .. ..
	" tubes, " "	0 0 12	.. .. ..
	Sheathing & Bolts, per ton	86 0 0	.. .. ..
	Bottoms, " "	91 0 0	.. .. ..
	Old (Exchange)	72 0 0	.. .. ..
IRON	Bars Welsh in London	6 15 0	7 0 0
	Do. to arrive	6 15 0	7 0 0
	Nail rods	7 10 0	9 5 0
	Do. Stafford in London	8 10 0	8 17 6
	Bars " "	8 10 0	10 0 0
	Hoops " "	9 5 0	10 10 0
	Sheets, single	10 0 0	11 0 0
	Pig No. 1 in Wales	4 5 0	4 10 0
	Refined Metal, do	4 0 0	5 0 0
	Bars Common do	6 0 0	6 5 0
	Do. Merch. Tyne or Tees	7 10 0	.. .. ..
	Do. Railway in Wales	5 15 0	6 5 0
	Do, Swede in London	10 15 0	11 0 0
	To arrive	11 0 0	.. .. ..
	Pig No. 1 in Clyde	2 12 0	2 17 0
	Do. f. o. b. Tyne or Tees	2 9 6	.. .. ..
	Do. Nos. 3, 4, f. o. b. Do	2 5 6	2 7 0
	Indian Charcoal Pigs, in Lond.	7 0 0	7 10 0
	Railway Chairs	5 10 0	5 15 0
	Do. Spikes	11 0 0	12 0 0
LEAD	English Pig Common	19 15 0	.. .. ..
	Do ordinary soft	20 5 0	.. .. ..
	Do. (W. B.)	22 10 0	.. .. ..
	Do. Sheet	21 10 0	21 15 0
	Do. Red Lead	23 10 0	24 0 0
	Do. White	27 0 0	30 0 0
	Do. Patent Shot	23 15 0	24 0 0
	Spanish	19 5 0	.. .. ..
STEEL	Swedish in kegs, rolled, p ton	14 0 0	14 10 0
	Do. hammered	16 0 0	16 10 0
	Do. in faggots	16 10 0	17 10 0
	English Spring	19 0 0	23 0 0
QUICKSILVER	Per bottle	7 0 0	.. .. ..
SPELTER	Foreign, per ton	19 10 0	.. .. ..
	To arrive " "	19 10 0	.. .. ..
ZINC	In Sheets	30 0 0	.. .. ..
TIN	English Blocks	85 0 0	.. .. ..
	Do. bars in barrels	86 0 0	.. .. ..
	Do. refined	88 0 0	.. .. ..
	Banca	80 0 0	.. .. ..
	Straits	76 0 0	.. .. ..
TIN PLATES*	IC Charcoal, 1st qu., per box	1 8 6	1 13 0
	IX Do., 1st quality "	1 14 6	1 19 0
	IC Do., 2d quality "	1 6 6	1 8 0
	IX Do., 2d quality "	1 12 6	1 14 0
	IC Coke	1 3 0	1 6 0
	IX Do	1 9 0	1 12 0
	Canada Plates, per ton	13 10 0	.. .. ..
	In London; 20s. less at the works.		
YELLOW METAL	Sheathing, p. lb	0 0 8¼	.. .. ..
	Sheets, per lb	0 0 8¾	.. .. ..

* At the works, 1s.@1s. 6d. less.

SALES OF ORES IN ENGLAND.

Lead.

SOLD AT LIVERPOOL, ex Kenna, BY MR. JAMES LEWIS.

DATE.	MINES.	TONS.	AMOUNT.	PURCHASERS.
July 20	Alamillos	48	£12 3 0	Sims, Willyams & Co
—	do	49	12 3 0	do do
—	do	49	12 3 0	do do
26	Glan Alun	15	11 4 6	Walker, Parker & Co
—	Pant Du	20	10 11 6	do do
—	Hendre Ucha	6	11 11 6	do do
—	North Henblas	10	10 2 6	do do
—	Summer Hill	3	11 2 6	A. Eyton.
—	Mount Pleasant	6	11 5 6	do do
—	Dyngwin	20	10 16 6	do do
—	Summer Hill	2	14 5 6	do do
—	Mount Pleasant	4	14 8 0	Walker, Parker & Co.
—	Central Minera	14½	11 15 0	J. Hughes.
—	do do	3	5 15 0	do do

Black Tin.

Date.	Mines.	Ts.	c.	q.	lbs.	p.p.t.	Amount		
July 20	Great Wh. Vor	70	7	3	0	..	£3363	9	10
21	Wheal Uny	9	14	2	9	..	412	13	6
—	Penhalls	7	7	2	4	..	339	6	7

Copper.

Sampled July 4, and sold at Swansea July 24.

Total Produce.

MINES.	TONS.	PRICE.	MINES.	TONS.	PRICE.
California Ore	575	£5450 2 0	Bottoms Slag	15	£38 5 0
Moonta	487	8053 15 0	Calcined Ore	2	4 1 0
Copper Ore	400	1170 0 0	Wallarroo Ore	165	814 14 6
Calcined Ore	144	475 4 0	Berchaven	225	1383 15 0
Coarse Metal	40	653 0 0	Cape Ore	29	500 19 6
Calcined Metal	8	131 12 0			

Companies by whom the Ores were Purchased.

NAMES.	TONS.	AMOUNT.	
Copper Miners' Company	130	736	7 9
Freeman & Co	145½	1 362	18 0
Greenfell & Sons	130	1 736	10 0
Sims, Willyams & Co	131	1 825	13 0
Vivian & Sons	143	2 375	8 0
Williams, Foster & Co	157½	2,082	12 0
Brit. & For. Copper Co	200	630	0 0
Charles Lambert	347	2,351	7 3

Ravenhead Copper Co	144			2.261	15 0
Sweetland, Tuttle & Co.	124			1.563	12 0
Penclawdd Copper Company	426			1,949	5 0
Total	2.078			£18,675	8 0

Totals and Averages.

	21 CWTS.	PRODUCE.	PRICE.	AVER.
Whole sale	2078	133¼	$8 19 9	£88 1 0

SAN FRANCISCO STOCK MARKET.

Latest by Telegraph.

SAN FRANCISCO, Aug. 18.

Name.	Bid per foot.	Name.	Bid per foot.
Gould & Curry	750	Crown Point	960
Savage	1150	Yellow Jacket	650
Chollar-Potosi	175	Belcher	115
Ophir	215	Alpha	...
Hale and Norcross	1700	Imperial per share	90

Latest by Mail.

NAME.	FRIDAY, July 6. Open'g	Clos'g	Sales for week Ending July 7. Shares.	Amount.
Sierra Nevada	$ 2	$ 2	100	$ 176 00
Imperial	108	107½	222	23.922 00
Gould & Curry	.....	.....	3	2.105 00
Chollar—Potosi	190	190	246	48.426 00
Yellow Jacket	740	675	128	93.830 00
Bullion	61	55	210	12.965 00
Crown Point	.....	.....	3	2.440 00
Belcher	187½	181	60	11.205 00
Overman	65	62½	1558	81.449 00
Ophir	252½	225	165	37.068 00
Hale & Norcross	.....	.....	...	.....
Exchequer	6	6	5	30 00
Savage	900	900	19	17.192 00
Empire Mill	.....	.....	1	125 00
Alpha	.....	.....	...	.....
Lady Bryan	.....	23⅝	170	346 00
Daney	.....	.....	...	.....
Confidence	55	57½	408	27.582 00
Baltimore Amer.	.....	.....	...	.....
De Soto	.....	.....	...	.....
Kentucky Cop. Co	.....	.....	...	.....
Golden Rule	.....	.....	...	.....

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men and Others.

The following claims have recently been issued from the United States Patent Office:

57,089.—WATER-WHEEL.—Walter R. Close, Bangor, Me.:

I claim the improved water-wheel made substantially as described, viz., with the arched annulus, the series of curved and bent wings, and the shaft tube, or the same and its flange, arranged as set forth.

57,175.—EXPLOSIVE COMPOUND.—Alfred Nobel, New York City:

I claim nitrine, or crystallizing nitro-glycerine, produced by the mixture of glycerine, sulphuric acid and nitric acid, free or nearly free, from hyponitric acid, for the purpose specified.

57,181.—ALLOY.—Frederick Pfeiffer, Philadelphia, Pa.:

I claim the aforesaid new and improved alloy metal, plated or covered, and particularly the addition of bismuth, antimony, and tin to lead and copper, in the order, proportions, and for reasons as already stated, using for that purpose the aforesaid metals, or or any other substantially the same and which will produce the intended effect.

57,188.—STEAM PUMP.—Louis G. Rodier, Springfield, Mass.:

1 claim, 1st, The arrangement in each end of a steam cylinder of the valve, b, with a steam reservoir, L, and post, f, so as to be operated by the piston to admit steam to the main valve-chest, substantially in the manner and for the purpose set forth.

2d, The construction of the stem of the valve, b, at each end of the cylinder, in such a manner that it shall be moved, reversing the main valve before the piston reaches the end of the cylinder, so as to cushion the piston, as set forth.

3d, The arrangement of the ports, h and s, respectively in the main valve and seat, so as to communicate with the exhaust-port and the valve chest, substantially as set forth.

4th, The arrangement of the water-valves hung for trunnions in the plugs, substantially as set forth.

5th, The contraction of the upper plug divided into three parts by means of partitions communicating with either end of the cylinder and with the delivery-pipe and air chamber, as shown and described.

6th, The arrangement of the yoke, u, operating substantially as set forth.

57,194.—DESULPHURIZING ORE.—Van Buren Ryerson, New York City:

I claim the process substantially as described of subjecting ores which have been desulphurized and their base metals oxydised to the action of the gases evolved from the process of desulphurizing another charge of such ores in the presence of atmospheric air, and mingled with binoxyde of nitrogen and jets of steam, for the purpose specified.

57,219.—COMPOSITION FOR REMOVING INCRUSTATIONS FROM BOILERS.—N. Spencer Thomas, Painted Post, N. Y.:

I claim a compound for removing and preventing incrustations in steam-boilers made of the ingredients herein set forth and mixed together, or applied in about the proportions specified.

57,228.—STEAM ENGINE.—Geo. I. Washburn, Worcester, Mass.:

I claim, 1st, the cylinder, A, constructed as described with a diaphragm or partition at its central portion traversed by the piston-rod, and combined with the pistons as specified

2d, The combinations of the cylinders, A, B, constructed and operating as described.

Re-issues.

2,333.—(Div. A.)—PROCESS OF MAKING STEEL DIRECT FROM THE ORE.—George Hand Smith, Rochester, N. Y. Patented July 18, 1854:

I claim the process, substantially as herein described, for converting iron ores directly into steel by subjecting the ore in the comminuted state in connection with carbon, or with or without other flux in a close oven, retort, or equivalent vessel, to a high degree of heat, and when converted treating it in a reheating furnace to weld and ball the particles, and then hammering, rolling, or squeezing the balls to express the impurities and complete the welding and compact the mass, as set forth.

I also claim in the process of conversion charging the comminuted ore and charcoal, or other carbonaceous substance, in the cementing oven, or other equivalent vessel, in alternate layers, substantially as and for the purpose specified.

UNITED STATES SECURITIES.

Reported for the Journal of Mining by Messrs. Meigs, Von Seybold & Co., No. 4 Broad st., New York.

Friday Evening.

LOANS. INTEREST PAYABLE IN GOLD.	AUTHORIZING ACTS.	AMOUNT OUTSTANDING.	RATE.	PRIN. PAY.	INTEREST.	WHEN PAYABLE.	OFF. PER CENT.	ASKED PER CENT.
Registered Bonds	28 January, 1847	$9.415.250	6	1867	.....	Jan. July.	128	.....
Coupon "							.....	.....
Registered Bonds	31 March, 1848	8.908,342	6	1868	.....	Jan. July.	126	129½
Coupon "							126	129
Registered Bonds	22 June, 1860	7.022,000	5	1871	.....	Jan. July	.....	.....
Coupon "							.....	.....
Registered Bonds	14 June, 1858	20,000.000	5	1874	.....	Jan. July.	.....	100
Coupon "							.....	100
Bonds, March 3, 1863		.....	6	1881	.....		.....	.....
Oregon War Debt		1.016.000	6	1881	.....	Jan. July.	104	.....
Registered Bonds	8 Feb. & 17 July & Aug., 1861	282.295.500	6	1881	.....	Jan. July.	111⅛	112
Coupon "							111¾	111⅞
Registered "	25 February, 1862 (5-20's)	514.780,500	6	1882	.....	May Nov.	108	108¼
Coupon "							110¼	110⅜
Registered "	(5-20's) new issue	100.000,000	6	1884	.....	May Nov.	.....	.....
Coupon "							108⅜	108⅝
Bonds, March 3, 1865	(5-20s)	80,734,500		1885	.....		108⅜	108¾
Registered "	(10-40's)	171.219,100	5	1904	.....	Mar. Sept.	98½	.....
Coupon "							101¾	101⅞
Total April 1								

LOANS. INTEREST PAYABLE IN LAWFUL MONEY.	RATE.	AMOUNT OUTSTANDING.	PRINCIPAL PAYABLE.	INTEREST.	WHEN PAYABLE.	OFF.	ASKED.
AUTHORIZING ACTS.							
Bonds, Cent'l P. R. R. Co., July 2, 1864	6	$2.362.000 00	1895	.....	Jan. July.	.....	.....
Bonds, Union P. R. R. Co., July 2, 1864	6	2,130.000 00	1895	.....		.....	.....
Temporary Loan	4		10 days' notice	.....		.....	.....
Temporary Loan	5	124,561.486 00	10 days' notice	.....		.....	.....
Temporary Loan	3		10 days' notice	.....		.....	.....
Certificates of Indebtedness, March 1, 1862	6	43.025,000 00	1 yr from date	.....	1 yr. fr. date	.....	.....
1 and 2 Years' Notes, March 3, 1863	5	.....	.....	.....	1 yr. fr. date	.....	.....
3 Years' Compound Interest Notes	March 3, 1863 / June 20, 1864	6	162.012.140 00	3 yrs from date	.....	At maturity	
3 Years' Treasury Notes	June 30, 1864 / March 3, 1865	7.3	.....	3 yrs from date	.....	Aug. Feb.	106⅛	106⅜
3 Years' Treasury Notes, March 3, 1865		7.3	812.221.600 00	3 yrs from date	.....	June Dec.	106	106⅛
3 Years' Treasury Notes, March 3, 1865		7.3	.....	3 yrs from date	.....	July Jan.	106	106⅛
Aggregate of Debt Bearing Lawful Money Interest, April 1			Total Interest				

2,334.—(Div. B.)—PROCESS OF MAKING STEEL DIRECT FROM THE ORE.—George Hand Smith, Rochester, N. Y. Patented July 19, 1854:

I claim the combination of the process of deoxidizing iron ore and carbonizing the metallic particles, substantially such as herein described, with the process of melting in crucibles, substantially as and for the purpose described.

The Yellowstone.

This is one of the most beautiful streams on the continent. The most practicable approach to it, is at the canon, thirty miles beyond Boseman, one hundred miles distant from this city. That has been the point of departure for the several boat expeditions, that have within the past two years been made, *via* the Yellowstone and Missouri, to the States. It is remarkable for some of the most stupendous scenery amid the Rocky Mountains. The rocks on either side of the river for many miles, are several thousand feet vertical height—and seen through the gorge formed by them, the Rocky Mountains furnish a background o wonderful grandeur and sublimity. For many miles down the river, the outlines of this majestic scene, are visible to the beholder, and it seems by distance to increase in enchantment. The river for eighty miles below the canon runs between abrupt banks, covered with verdure, presenting at almost every angle, small copses of cottonwood. The rapids are very numerous, and many of them calculated to alarm the voyager, who for the first time ventures down them, though with skillful pilotage, they are void of danger. There is nothing in this part of the river of any interest. The land is too high for cultivation, the grasses which cover it are stunted and thin. The river is full of fine trout and bass, and the numerous sedgy islands are inhabited by a great variety of water fowl. Gradually widening, the river suddenly presents on either bank, lofty cliffs of yellow sand-stone, which at first, are some distance from its margin, but soon they approach it so closely as to confine the stream, and overhang with their craggy summits its agitated surface. The perpendicular sides of these cliffs have been curiously eroded by the elements, into the appearance of hieroglyphics, which cover them from base to summit. In many instances, the characters following the stratification, seem to be lined like the characters delin-ated on the old Egyptian temples of Edfou and Luxor, and to make the resemblance more perfect, many of the rocks are capped with tower-like, or castellated tops, or spring into pyramids. The intervals which occur in these cliffs, are occupied by cottonwood groves of prolific growth and superabundant foliage, which jut into the river, and on every side are so regular and uniform, that it is almost impossible to resist the belief that they have not been both planted and trimmed by the hand of man, and are in fact the cultivated grounds belonging to some old mediavel castle. Whenever a cliff is overhanging, it gives protection to myriads of swallows' nests beneath the sh-lving rock. Unequal in height, varying from one hundred to three hundred feet, many of these crags towering above the river, and seen for many miles along its beautiful reaches, resemble extensive fortifications and citadels. Occasionally for several miles they border the river, and rise to such a height as to interrupt the sun's rays, giving a sombre cast to the river, while passing between them. This yellow sandstone rock, with only occasional interruptions, traverses the line of the river at greater and lesser distances from its margin for more than three hundred miles. The country beyond the ridge stretches out into plains on either side, which at the distance of from two to four miles, are skirted by heavy uplands sparsely covered with stunted timber. These plains are covered with grass, and afford the finest ranges in the world for buffalo, antelope and elk, herds of which may often be seen by the voyager, roaming their immense extents. They are probably, for, climate, timber, soil, and convenience of irrigation, the finest agricultural lands in Montana. The water of Clark's Fork, Big Horn and Rosebud, bring with them from the mountains large quantities of debris, which impart to the Yellowstone a milky appearance, that increases in density from the mouth of Clark's Fork, until it reaches Powder River, at the commencement of he Bad Lands, where the color changes to a drab almost as dark as that of the Missouri. The passage of this river through the Bad Lands is quite as remarkable as its passage through the Sandstone. The banks are entirely bare. Lofty pinnacles of clay, stratified with innumerable shades of color rise on either hand, frequently to the height of a thousand feet. Groves of stunted cottonwood, apparently crowded in between these pinnacles, furnish a melancholy contrast to the gorgeous groves further up the river. Ranges o low hills, which have been burnt until the material of which they are formed, has become one solid red brick, some with table summits, and others conical and sharp, cover the surface of the country in all directions. The river becomes sluggish, expands to more than a mile in width, and is filled with shifting islands of sand. There is not a foot of soil to be seen that can be cultivated, and the earth is impracticable for any kind of physical improvement.

Nearly the entire distance of this passage the banks on each side of the river present from one to three well defined veins of resinous coal, varying from two to eight feet in thickness. This coal burns readily, emits a bituminous odor, and can be found in greater quantities in this locality than probably any other in the world. Want of a good cover might probably present an insurmountable barrier to its successful development, but in all other respects, it is not surpassed by any coal placer in America.

A few miles before it empties into the Missouri, the river takes the character of that stream, the banks are low and constantly changing, sand bars are frequent, snags abundant, and all interest in scenery ceases. We think the Yellowstone might be navigated to the foot of Wolf rapids, one hundred and fifty miles above its mouth. Those rapids are probably more dangerous than any other in the river, but in less than a hundred miles above them are Bear rapids, which are very shallow and filled with large rocks—forty or fifty miles above them are Buffalo shoals, where for more than six miles the river is very rapid, and ordinarily less than two feet in depth. The bottom is composed of yellow sandstone which is very hard, and crosses the river at this point in the ledge. It would be impossible to improve it. All thought of ascending the river by steam to the Big Horn must be given up. The best improvement that could be made would be a wagon road along the bank, from the foot of Wolf rapids—a work that could be constructed without any serious difficulty.—*Montana Post.*

NEW YORK STOCK MARKET.

MINING.	Aug. 18. BID.	ASKED.	Aug. 20. BID.	ASKED.	Aug. 21. BID.	ASKED.	Aug. 22. BID.	ASKED.	Aug. 23. BID.	ASKED.	Aug. 24. BID.	ASKED.
Ada Elmore	.....	3 50	.....	3 00	.....	3 00	.....	3 00	.....	3 25	.....	2 50
Altona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
American Flag	1 60	1 75	1 75	1 80	1 70	1 75	1 65	1 75	1 65	1 75	1 70	1 80
Atlantic & Pacific	2 15	2 50	2 25	2 50	2 60	3 00	2 90	.....	3 00	3 25	3 00	3 35
Bates & Baxter Gold	1 75	2 00	1 80	2 50	1 75	2 25	1 75	2 40	2 00	2 25	2 00	2 50
Benton Gold	1 40	1 50	1 60	1 70	1 60	1 65	1 60	1 75	1 65	1 75	1 60	1 70
Bobtail Gold	.....	3 00	.....	3 00	.....	3 00	2 00	3 00	2 00	3 50	2 00	3 50
Consolidated Gregory	17 75	18 00	18 05	18 30	18 35	18 50	20 30	20 40	19 75	20 00	19 25	19 50
Corydon	2 50	2 75	2 55	2 75	2 50	3 00	2 65	2 75	2 20	3 00	2 50	2 75
Downieville Gold	1 29	1 30	1 29	1 30	1 29	1 30	1 30	1 35	1 30	1 31	1 30	1 32
Eagle Gold	.....	.....	.....	.....	.....	2 50	.....	.....	.....	.....	.....	.....
Gold Hill	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grasss Valley Gold	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gunnell Gold	1 03	1 04	1 03	1 04	1 04	1 05	1 08	1 09	1 10	1 12	1 07	1 09
Gunnell Central	.....	.....	.....	.....	.....	.....	.....	5 00	.....	5 00	.....	5 00
Holman	38	40	40	45	41	45	41	43	40	45	40	45
Hope Gold	1 75	2 25	.....	2 50	...	2 25	.....	2 50	.....	2 50	.....	2 25
Keystone Silver	7	9	7	9	8	9	8	9	8	9	8	10
Kipp & Buell Gold	1 85	2 05	1 85	1 95	1 80	1 90	1 85	1 90	1 75	1 80	1 75	1 80
Liberty Gold	10	20	15	20	14	20	19	25	19	22	22	24
Liebig Gold	55	60	55	60	55	60	50	.....	55	.....	55	.....
Manhattan Gold	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York	1 20	1 38	1 30	1 50	1 35	1 45	1 40	1 45	1 30	1 40	1 30	1 40
Oak Hill Gold	.....	.....	.....	.....	.....	.....	.....	.....	3 50	4 00	3 00	3 50
Quartz Hill	4 20	4 30	4 20	4 35	4 25	4 30	4 25	4 40	4 35	4 50	4 35	4 50
Rocky Mountain Gold	2 85	2 85	.....	2 75	2 80	3 00	2 90	.....	3 00	.....	4 00	4 15
Silver Eagle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smith & Parmelee Gold	9 00	9 35	9 10	9 40	9 00	9 25	9 10	9 25	9 00	9 10	8 95	9 00
Texas Gold	10	12	12	15	12	19	.....	.....	13	15	14	23
Virginia City	.....	.....	.....	50	.....	.....	.....	48	.....	.....	.....	.....
Waddingham Gold	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union Gold	2 00	2 75	2 23	3 00	2 00	.....	.....	2 50	2 15	.....	2 00	3 00
West Fellows Gold	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Caledonia Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3 50	.....
Hancock Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Canada Copper	.....	80	.....	.....	.....	90	25	75	.....	80	50	70
Central Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Evergreen Bluff Copper	.....	.....	.....	.....	.....	10 00	.....	.....	.....	.....	7 00	10 00
French Creek Copper	.....	.....	60	80	.....	.....	.....	.....	.....	.....	.....	.....
Hilton Copper	.....	.....	.....	2 00	.....	.....	.....	.....	.....	1 50	.....	1 50
Excels or Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70
Montana Gold	.....	30	.....	.....	.....	1 00	10	50	25	30	25	30
Knowlton Copper	3 00	.....	.....	.....	.....	.....	.....	.....	3 00	.....	3 00	5 00
Mendota Copper	.....	3 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	5 00
Minnesota Copper	.....	.....	.....	.....	.....	.....	9 00	.....	10 00	13 00	10 00	.....
Norwich Copper	.....	.....	.....	.....	.....	.....	.....	1 50	.....	3 00	.....	3 00
Ogima Copper	.....	.....	.....	.....	.....	.....	.....	.....	4 00	.....	4 00	.....
Deubo Lead	.....	.....	.....	20	.....	20	.....	.....	.....	19	.....	25
Phœnix Lead & Mining Co	.....	1 50	.....	.....	.....	1 60	.....	1 60	.....	1 55	.....	1 55
Redwood Lead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2 00
Quincy Copper	.....	.....	.....	.....	.....	.....	.....	.....	49 00	51 25	50 00	.....
Wallkill Lead	1 23	1 30	1 25	1 26	1 32	1 32	1 32	1 33	1 33	1 35	1 30	1 32
Columbian Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Schuylkill Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Flint Steel River Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copake Iron	.....	.....	25	50	25	50	25	.....	.....	.....	25	.....
Foster Iron	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Annular Drill	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Perry & Peop. S. Min. Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockland Copper	.....	.....	6 00	.....	6 25	.....	6 50	.....	6 50	.....	6 50	.....
Isle Royal Copper	.....	.....	.....	.....	.....	.....	11 25	.....	11 00	13 00	11 00	.....
British Amer. Coal. Pref	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rutland Marble	16 00	19 00	16 50	19 00	16 00	19 00	16 50	19 00	17 00	20 00	17 25	19 00
Huron Copper	46 00	.....	45 00	.....	47 00	49 00	45 00	50 00	45 00	.....	.....	.....
Columbia	.....	.....	1 25	1 40	1 25	1 75	1 15	1 25	1 20	1 45	1 30	1 45
Franklin Copper	.....	.....	65 00	70 00	68 25	.....	68 00	.....	.....	.....	76 00	.....
Indiana Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	5 00	.....	5 00
OIL STOCKS.												
Bennehoff Run	6 60	6 70	6 60	6 70	6 60	6 70	6 60	6 70	6 50	6 60	6 50	6 60
Buchanan Farm	29	31	30	33	27	30	28	30	25	26	25	27
Central	2 30	2 40	2 30	2 40	2 25	2 45	2 30	2 45	2 30	2 45	2 30	2 50
Excelsior	33	35	30	35	28	40	28	35	35	40	.....	35
First National	7	9	7	10	7	8	7	10	7	10	7	8
Ivanhoe	.....	2 25	.....	2 25	.....	2 25	.....	2 25	.....	2 25	.....	2 25
N. Y. & Alleghany	4 80	5 00	4 75	5 00	4 80	5 00	4 80	5 00	4 50	5 00	4 70	5 00
Northern Light	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oil Creek of N. Y.	.....	.....	.....	35	25	35	20	30	.....	.....	.....	35
Pit Hole Creek	1 50	1 80	1 50	1 90	1 60	1 90	1 60	1 75	1 55	1 75	1 75	1 85
Rynd Farms	20	25	20	25	20	27	20	25	22	25	22	25
Shade River	19	30	20	25	25	30	28	30	26	30	35	40
United States	7 85	7 95	8 00	8 05	8 20	8 25	7 90	8 00	7 80	7 90	7 90	8 00
Palmer Petroleum	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Empire and Pit Hole	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Venango & Pit Hole	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Allen Wright	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bergen Oil & Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bennehoff & Pit Hole	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Equitable	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Forest Co. Petroleum Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gt. Western Consolidated	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Guild Farm	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Heydrick Bros	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oak Shade Petroleum	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
FREE LIST.												
Bennehoff Run Oil	2 90	3 00	2 50	3 00	3 25	3 30	3 50	3 75	3 85	3 90	3 75	3 80
Brevoort	1 30	1 60	1 30	1 70	1 00	1 55	1 50	1 75	1 70	1 80	1 70	1 80
Bliven	.....	1 00	.....	.....	.....	2 00	.....	.....	.....	.....	.....	1 00
Brooklyn	40	.....	35	65	45	1 00	45	50	45	75	40	60
Bradley	1	4	.....	.....	1	4	1	4	.....	10	.....	10
Bemis Heights	.....	5 00	.....	.....	.....	.....	4 00	.....	.....	.....	.....	5 00
Cherry Run Petroleum Co	.....	.....	.....	.....	5	20	.....	.....	.....	.....	.....	.....
Cherry Run Special	.....	30	.....	30	.....	30	10	30	.....	25	.....	20
Clinton Oil	1 25	2 00	.....	.....	1 35	1 90	1 40	2 00	1 30	2 00	1 75	.....
Consolidated (New York)	.....	1 50	1 40	2 00	.....	1 75	.....	1 40	.....	1 40	.....	.....
Empire City Pet'm Co	.....	.....	.....	30	.....	30	.....	30	.....	35	.....	.....
Eclectic Oil	.....	.....	.....	.....	2 00	50	2 00	.....	.....	.....	.....	.....
Enniskillen	.....	.....	.....	.....	2 00	.....	.....	.....	.....	.....	.....	.....
Germania	5	9	5	9	5	8	5	8	4	5	.....	8
Hamilton McClintock	65	70	50	65	50	70	50	65	45	70	.....	70
Heydrick	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
High Gate	.....	15	.....	15	.....	15	2	15	.....	15	.....	15
Inexhaustible	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Liberty	.....	.....	.....	.....	.....	.....	.....	8	.....	20	.....	20
Mt. Vernon	.....	.....	.....	25	11	.....	5	25	.....	30	10	25
Manhattan	.....	.....	.....	.....	16	40	.....	.....	.....	30	15	.....
National	2 00	3 75	2 50	4 00	2 25	2 40	2 25	4 00	.....	3 00	.....	4 00
New York & Newark	.....	10	.....	10	.....	8	.....	10	.....	.....	.....	14
New York, Phil. & Balt	7	11	8	10	8	10	8	11	9	10	7	.....
Second National	12	40	10	40	5	.....	20	40	18	38	.....	.....
Oceanic	.....	15	6	12	.....	10	5	.....	5	12	6	.....
Rathbone Oil Tract Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pit Hole Farms	.....	50	.....	.....	.....	50	.....	.....	.....	50	.....	.....
Pet. Consolidation	.....	10	2	9	.....	10	.....	10	.....	.....	.....	10
Union	3 00	3 50	2 75	3 50	2 75	.....	.....	.....	3 00	.....	3 00	.....
United Petroleum Farms	.....	23	.....	23	.....	24	.....	25	.....	22	15	26
Titus Estate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
West Va. Oil & Coal Co	.....	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....
Webster	11	20	10	25	10	20	.....	.....	.....	30	10	.....

BOSTON STOCK MARKET.

Reported for the Journal of Mining by Lombard & Co., 99 State Street, Boston.

Companies.	Aug. 17. BID.	ASKED.	Aug. 18. BID.	ASKED.	Aug. 20. BID.	ASKED.	Aug. 21. BID.	ASKED.	Aug. 22. BID.	ASKED.	Aug. 23. BID.	ASKED.
MINING.												
Albany and Boston	7 00	.....	.....	.....	.....	.....	.....	10 00	.....	.....	8 00	12 00
Bay State	13 25	.....	13 25	14 00	13 75	14 00	14 25	14 50	14 12	14 50	13 75	14 00
Boston	1 00	.....	1 00	.....	1 00	.....	75	1 50	.....	1 37	1 00	1 37
Canada	60	75	60	75	60	75	.....	55	55	60	55	.....
Concord	3 25	3 50	3 25	3 50	3 75	4 00	4 00	.....	4 00	4 50	4 00	4 12
Copper Falls	44 00	.....	44 00	45 00	48 00	48 75	.....	50 00	46 50	47 50	48 00	49 00
Franklin	62 00	62 25	.....	65 00	68 00	68 50	69 50	70 00	.....	68 50	74 50	75 00
Hancock	29 50	29 75	30 00	.....	31 00	31 25	30 00	31 00	.....	29 50	28 75	29 00
Humboldt	.....	.....	4 75	5 00	4 75	5 00	.....	4 87	4 37	4 50	4 25	4 50
Huron	45 00	.....	44 75	46 00	47 00	48 00	47 37	48 00	45 50	46 50	46 00	47 00
Isle Royal	.....	12 00	11 00	11 87	11 00	11 87	11 50	12 00	.....	12 00	11 50	13 00
Mesnard	2 87	3 25	2 50	3 00	2 50	3 00	2 62	3 00	2 25	3 00	2 50	3 00
Minnesota	9 75	.....	9 75	.....	10 00	10 50	10 00	15 00	.....	11 00	11 00	11 25
National	.....	.....	16 00	19 00	16 00	18 00	.....	18 00	.....	18 00	15 00	18 00
Petherick	6 50	6 87	6 50	6 87	6 62	6 87	6 62	7 00	6 62	6 75	6 37	6 50
Pewabic	39 00	39 50	40 50	.....	41 50	41 75	.....	41 75	37 50	38 00	39 62	39 87
Phœnix ..... ass't pd	.....	12 00	9 00	11 00	9 00	11 00	.....	.....	.....	9 00	.....	9 00
Pittsburg	47 00	50 00	46 00	50 00	47 00	50 00	.....	49 00	50 00	51 00	50 00	50 50
Pontiac	.....	1 50	.....	1 50	.....	1 50	.....	1 50	1 37	1 50	1 00	1 50
Quincy	47 00	48 00	47 00	48 00	48 50	50 00	50 00	.....	50 50	.....	52 00	53 00
Rockland	8 25	9 00	8 00	8 25	8 00	8 25	.....	.....	7 75	9 00	7 00	8 75
South Side	1 75	2 00	1 75	2 00	1 75	2 00	2 00	.....	.....	.....	2 00	2 50
Star	1 75	2 00	1 75	.....	1 75	.....	2 00	.....	1 75	.....	1 75	2 00
St. Clair	7 00	7 25	7 00	7 25	6 75	7 25	6 87	7 00	6 87	7 00	6 75	6 87
Superior	3 50	3 87	3 50	3 75	3 50	3 75	3 50	3 75	3 50	4 00	3 62	3 87
Toltec	.....	.....	.....	.....	.....	.....	.....	.....	3 50	8 00	3 50	8 00
Winthrop	1 50	2 00	1 62	2 00	1 62	2 00	1 87	2 00	1 87	2 00	1 75	2 00
Albion Gold	75	1 00	50	60	50	60	.....	.....	50	60	.....	.....
Baltic Gold	70	1 00	70	1 00	70	1 00	70	1 00	70	1 00	.....	.....
Bullion Consolidated	2 35	.....	2 35	2 60	2 60	2 75	2 60	2 70	2 60	2 70	.....	.....
Caledonia Gold	90	1 00	80	1 00	80	1 00	75	85	.....	85	.....	.....
Colorado Gold	.....	10 00	.....	10 00	.....	10 00	.....	10 00	.....	10 00	.....	.....
Columbia Gold	50	75	50	75	50	75	50	75	70	80	.....	.....
Incas Gold	1 00	1 25	1 00	1 25	1 00	1 25	1 00	1 25	1 00	1 25	.....	.....
Montezuma Gold	2 15	2 50	2 50	2 75	2 60	2 75	2 45	2 50	2 40	2 50	.....	.....
Peck Gold	40	1 50	1 40	1 50	90	1 00	85	1 00	85	1 00	.....	.....
Waverly Gold	60	90	60	90	25	30	25	30	25	30	.....	.....
Consolidated Gregory Gold	16 50	16 65	17 75	18 00	17 75	18 00	18 00	18 00	18 00	18 50	.....	.....
Quartz Hill Gold	4 40	4 50	4 20	4 40	4 20	4 30	4 20	4 35	4 25	4 35	.....	.....
Smith & Parmelee Gold	9 10	9 20	9 00	9 25	9 00	9 35	9 10	9 40	9 00	9 20	.....	.....
COAL.												
Belmont	2 00	2 75	2 00	2 75	2 00	2 75	2 50	2 75	2 50	2 75	.....	.....
Collins	.....	80 00	.....	80 00	.....	70 00	.....	70 00	.....	70 00	.....	.....
Cape Breton	2 75	3 00	2 75	3 00	2 75	3 00	2 75	3 00	2 75	3 00	.....	.....
Eagle Hill Mutual	50	75	50	75	50	75	50	75	45	55	.....	.....
Franklin	.....	50	.....	50	.....	50	.....	50	.....	30	.....	.....
Gilberton	28 00	32 00	28 00	32 00	28 00	32 00	27 00	30 00	27 00	30 00	.....	.....
Glenville	2 00	2 50	2 00	2 50	2 00	2 50	2 00	2 50	2 00	2 50	.....	.....
Harleigh	57 00	60 00	57 00	60 00	57 00	60 00	56 00	60 00	60 00	70 00	.....	.....
Lackawana	5 00	7 00	5 00	7 00	5 00	7 00	5 00	6 50	5 00	6 50	.....	.....
Locust Dale	17 00	19 00	17 00	19 00	16 00	18 00	16 00	18 00	16 00	18 00	.....	.....
Mammoth Vein	6 50	7 00	6 50	7 50	6 50	7 50	6 50	7 50	5 00	5 50	.....	.....
Mount Pleasant	28 50	30 00	28 00	30 00	28 00	30 00	28 00	30 00	28 00	30 00	.....	.....
New England	28 00	30 00	26 00	28 00	26 00	28 00	26 00	28 00	26 00	28 00	.....	.....
Short Mountain	21 75	22 00	21 75	22 50	21 75	22 50	21 75	22 50	21 75	22 50	.....	.....
Summit Branch	13 00	13 50	13 00	13 50	13 00	13 50	13 00	13 50	13 00	13 50	.....	.....
PETROLEUM.												
Beebe Farm	4 00	.....	5 00	.....	5 00	7 00	5 00	7 00	5 00	7 00	.....	.....
Boston and Kentucky	.....	20	.....	20	10	50	10	15	10	15	.....	.....
Boston Oil Creek Land Co	15	50	15	50	15	50	15	50	15	50	.....	.....
Boston Petroleum Oil Co	50	.....	50	.....	50	.....	.....	50	.....	50	.....	.....
Botolph Oil Well Co	1 00	1 50	1 00	1 50	1 00	1 50	1 00	1 50	1 00	1 50	.....	.....
Crescent Petroleum Co	45	75	45	75	45	60	45	60	45	60	.....	.....
Everett Oil Co	5	7	5	7	5	7	1	4	3	4	.....	.....
" " (Pref. Stock)	35	50	35	50	35	50	30	35	30	35	.....	.....
Farrar	.....	7 00	.....	7 00	.....	7 00	.....	7 00	.....	7 00	.....	.....
Fuller Farm	8	10	8	10	8	10	8	10	8	10	.....	.....
Great Basin	5	10	5	10	5	10	5	10	5	10	.....	.....
Indian Spring	10	25	10	25	10	25	10	25	10	25	.....	.....
Mass. and Oil Creek	90	1 00	80	90	90	1 00	75	80	60	70	.....	.....
New England	10	15	10	15	10	15	10	15	10	15	.....	.....
New York and Boston	.....	30	.....	30	.....	30	.....	30	.....	30	.....	.....
Pepper Petroleum	2 80	2 90	2 75	2 90	2 75	2 90	2 60	2 80	2 50	2 75	.....	.....
Pittsburgh and Boston	12	15	12	15	12	15	12	15	12	15	.....	.....
Suffolk and Oil Creek	.....	10	.....	10	.....	10	5	8	5	8	.....	.....
Tremont	2 00	3 50	2 00	3 50	2 00	3 00	1 00	2 50	1 00	2 50	.....	.....
Winthrop	2	15	3	15	3	15	1	5	1	5	.....	.....
New York Companies.												
Atlas Oil	.....	.....	.....	.....	3	6	3	6	3	06	.....	.....
Bennehoff Run	6 35	6 45	6 60	6 70	6 60	6 70	6 60	6 70	6 60	6 70	.....	.....
Buchanan Farm	26	35	26	35	29	31	30	35	27	30	.....	.....
Central	2 30	2 40	2 30	2 40	2 30	2 40	2 30	2 40	2 30	2 40	.....	.....
Cherry Run Special	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Empire City	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Excelsior	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York & Alleghany	4 90	5 00	4 50	5 00	4 80	5 00	4 75	5 00	4 80	5 00	.....	.....
Oil Creek	25	35	30	40	30	40	25	30	28	30	.....	.....
Pit Hole Creek	1 60	1 75	1 50	1 60	1 50	1 80	1 50	1 90	1 60	1 90	.....	.....
Rynd Farm	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stewart's Run	20	22	18	20	17	22	15	20	15	20	.....	.....
United States	7 80	7 90	7 85	8 00	7 85	7 95	8 00	8 15	8 20	8 25	.....	.....

PRICES OF ASSAYING IMPLEMENTS.*

[CORRECTED WEEKLY.]

Smelting Furnaces	$35 00@ 40 00
Cupelling "	35 00@ 40 00
Scales	10 00@ 30 00
Assay Balances and Weights	100 00@200 00
Plumbago Crucibles	25@ 1 50
Paris "	15@ 1 25
Porcelain Evaporating Dishes	25@ 5 00
Fire Tongs	75@ 3 50
Hammers	1 00@ 2 50
Funnels	15@ 1 00
Litmus Paper, quire	1 00@ 1 25
Ingot Moulds	1 25@ 3 00
Flasks, Bohemian Glass	15@ 1 00
Sand Baths, Iron	25@ 1 00
Pivers	50@ 2 00
Mortar and Pestle, Iron, Agath, etc	50@ 20 00
Lamps, Gas and Alcohol	75@ 5 00
Blowpipes	50@ 3 00
Hydro-Oxygen Blowpipes	25 00@125 00
Pincers, or Cutting Pivers	75@ 1 50
Glass Tubes, German, etc., per lb	75@ 1 50
Muffler	50@ 1 50
Anvils	1 00@ 2 00
Cupel Moulds	3 50@ 5 00
Cupels, per doz	50@ 3 50
Bone Ash, per lb	25@ 50
Test Lead, "	50@ 75

* These articles can be procured at the stated rates, by sending order, with remittance, to

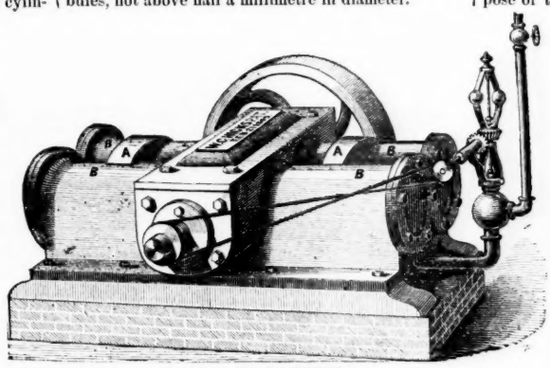
WESTERN & COMPANY, 37 Park Row.

CHEMICALLY PURE PREPARATIONS * USED IN THE VOLUMETRIC ASSAY.

Acid, Acetic	$0 75 oz
" Arsenious	0 05 lb
" Hydrocholoric	0 50 oz
" Nitric	0 60 lb
" Oxalic	0 20 oz
" Sulphuric	0 75 lb
Ammonia	0 60 lb
Baryta, Carbonate	0 20 oz
" Hydrate	0 40 oz
" Nitrate	0 12 oz
Barium, Chloride	0 12 oz
Copper, Sulphate	0 10 oz
Iodine	0 75 oz
Iron, Sesquichloride, Cryst	0 25 oz
Lead, Nitrate	0 10 oz
Mercury, Peroxide	0 20 oz
" Protonitrate	0 25 oz
" Chloride	0 20 oz
Potassa,

THE HICKS ENGINE.

This engine—an accurate cut of which is herewith published—was invented by Mr. William C. Hicks, and is patented not only in the United States, but in nearly all European countries and their dependencies. four single-acting pistons, working in the four cylinders marked B, B, B, B, are all connected to cranks on one shaft by suitable connecting rods, each piston taking steam before the next succeeding one has finished its stroke, thereby insuring a uniform and continuous motion, and avoiding the dead points which render ordinary engines so variable in their motions, and difficult to start, if stopped or caught on the centre. The pistons, connected directly to the crank, form the only moving parts, and these, with the cylinders, compose the whole machine. Each piston is a slide valve for the one beside it. The advantages claimed for it by the Hicks Engine Company (85 Liberty street, N. Y.,) over other engines are the following: "Greater economy in price, space and weight; great reduction of friction, and consequent economy of steam; extreme simplicity of construction and operation; greater durability and saving of repairs; requiring no protection from the weather; great convenience and economy of transportation; can be run at any velocity and in any position; it has no dead points; more perfect and rapid valve-motions; dispensing with all external valves and steam-chests; dispensing with all valve and reversing gear; more uniform and continuous motion; the cylinders cannot get out of line; great economy of foundations and setting-up, and higher speed of revolutions."



THE HICKS ENGINE.

Special Scientific Brevities.

☞ A scientific way of lighting pipes and cigars has been recently introduced in Paris under the name of *poudre de fue*. It consists of pyrophorous, which is preserved in a small tin case with a narrow orifice. When a little of this black powder is poured out on the end of a cigar, or on the tobacco in the pipe stem, and then gently breathed upon, it becomes incandescent, and is in a condition to light said pipe or cigar. What next? Why, there are little tubes sold containing pellets of potassium, and they are recommended to the juvenile Parisians as a means of forming splendid Gregorian fire-works on any convenient piece of water!

☞ M. de Chancourtois, in a recent paper to the French Academy, says that the diamond is derived from hydrocarburetted emanations, just as sulphur is derived from hydrosulphuretted ones. He contends that the diamond is separated by the humid combustion of a carburetted hydrogen, the carbon of which is only partly oxidised with the whole of the hydrogen, while the remainder of the carbon that has escaped oxidation is deposited in crystals, that is, in the state of diamond

☞ There are peculiar difficulties in the way of ascertaining accurately the conducting power of mercury for heat, but Professor Gripon, of Lille, seems to have overcome them very successfully, and to have made a determination which may be regarded as very closely approximating to absolute accuracy. It shows the conductivity of mercury for heat to be 407-1.000ths of that of lead. Therefore, calling the conductivity of silver 100, that of mercury is 3·82. being a little more than that of gas-retort carbon, as found by Peclet.

☞ Travelers and geologists have been at a loss to account for the origin of the masses of asphalte, sometimes of considerable size, found floating on the water of the Dead Sea. In a paper recently presented to the Academy of Sciences by M. L. Lartet, "On the deposits of Bitumen in Judea, and on the Asphalte of the Dead Sea," the author states his belief in the existence of a series of hot springs which rise through bituminous limestone and bring up the asphalte.

☞ They use on the Prussian railroads a heat generator, which consists of a cone of wood covered with hemp and placed within a cone of copper, the whole being enclosed in a metalic vessel, through which *air heated by motion* is conveyed into the car. The movement by the axles imparts motion to the cone, and the motion of the latter heats the air surrounding it, raising it to a temperature of 80 deg. Fahrenheit in ten minutes.

☞ We mentioned some time ago the discovery by M. Nickles of some new solvent of gold, among which was nascent iodine. Mr. Nickles has now found that iodine, when not in the nascent state, will dissolve gold, when aided either by pressure or the influence of sunlight.

☞ A beautiful scarlet or purple dye, it has lately been discovered, can be produced from theine, an oil extracted from tea, and it is also found in the species of horse chestnut and holly which grow in Brazil.

☞ Mr. Amy assents to De Celamy's opinion that the apparent acceleration of the moon is due to real retardation of the earth, arising from friction in the tidal movements of the waters.

☞ Four cast-steel tires made by Krupp, for a goods locomotive in England, run 100.000 miles without being turned; and were but slightly worn. The weight on them was eighteen tons.

Mineral and other On-dits.

☞ M. Bemy recently exhibited to the French Academy a diamond, which under its ordinary condition is slightly tinted with yellow, but which, when submitted to a high temperature, assumes a rose tint, which it possesses for several days, being only gradually restored to its original hue.

☞ It has been ascertained that Massachusetts contains a peat area sufficiently large to make one hundred and twenty-five million cords of fuel of this nature. Not a town in the State can be named where peat does not exist; and upon Cape Cob, where wood for fuel is nearly exhausted, there peat is found most abundant, and of most excellent quality, though the people have not yet learned its true value.

☞ The largest masses of gold ever found were—first, that found at Ballaret, Australia, in 1859, which weighed 224 pounds; second, that found in Calaveras county, in 1854, which weighed 195 pounds.

☞ The largest mass of copper that ever left the mines of Lake Superior has just reached Cleveland, Ohio. It is from the Cliff mines, and weighs 16,130 pounds. It is estimated that it contains at least ninety per cent. of copper.

☞ A valuable vein of Cannel coal has been found four miles above Brownsville, on the Missouri river. It has been penetrated eight feet, and no bottom has yet been reached. It can be thrown out within fifty feet of the river.

☞ Mr. Nicholson, of Georgetown, Va., has discovered a very peculiar and beautiful metal in that State, which has every appearance of oxide of silver.

☞ Petroleum has been discovered in Chesterfield county, Va., six or seven miles above Petersburg.

A New Mineral.

A new mineral, to which the name of laurite has been given, has lately been found in Borneo, and a description of it laid before the Paris Academy of Sciences by M. Wohler. It is found mixed with the ore of platinum, and occurs in the form of small globules, not above half a millimetre in diameter.

All Sorts.

☞ When you make a quotation always give the authority, thus:

But seen too oft, familiar to the face,
We first endure, then pity, then embrace A. Pope.

How guilt, once harbored in the conscious breast,
Intimidates the brave, degrades the great Dr. Johnson.

Lives of great men all remind us
We can make our lives sublime;
And departing, leave behind us,
Footprints on the sands of time
By W. H. Longfellow.

Till I well could weep, for a time so sordid and mean,
And myself so languid and base A. Tennyson.

The mountain rill
Seeks with no surer flow the far bright sea
Than my unchanged affection flows to thee,
Pare Benjamin.

☞ Mr. Harding proposes, and seems to have shown by experiment, the practicability of a gun without any breach. It is a simple cylindrical tube. The shot is placed at the centre, the charge behind it confined by a wad, and a second wad is introduced at such a distance as to leave an air space behind the charge. It is an extraordinary fact that although the gun is equally open in both directions, almost the whole force of the explosion takes place at the shot, which attains the same velocity as if fired from an ordinary gun, and is followed by the gases generated in the gun, a very small part only escaping at the breach. There is no recoil.

☞ It is noteworthy, says a traveler, that the system of hatching eggs by artificial heat, to which attention has repeatedly been called by travelers to the East, is practiced in the Egyptian villages to-day, apparently in precisely the same way as at any time in the last thousand years. A naturalist also notes that the old style of laying still continues.

☞ The Chincha Islands do not exceed in extent 2½ square miles, yet for years past they have supplied guano to an average of 400 ships per annum, the value of such cargoes in Europe being upward of £50,000.

☞ Despise not the poor. Even in the humble flint sleep the warm sparks which may light up the night. Make thee, O rich man, rather as a steel to the stone, and entice the slumbering sparks out of it.

☞ "Married couples resemble a pair of shears," says Sidney Smith, "so joined that they cannot be separated, often moving in opposite directions, yet always punishing any one who comes between them."

☞ The air of law courts having been analyzed, was found to be far more deleterious to health than that obtained from deep mines and other places of obscurity.

☞ Madame Foania, of Charcoal Flat, Sierra Co., Cal., has a duck that has laid 139 eggs in 139 days, and during that time has evinced no disposition to set.

☞ A county convention is soon to meet at Auburn for the purpose of organizing Placer county, Cal., into one mining disirict, under a uniform code of laws.

☞ A Western editor thinks that Hiram Powers is a swindler, because he chiseled an unfortunate Greek girl out of a block of marble.

☞ Sixty thousand fishes at a meal is the consumption of a person who eats an ounce of fish-roe at breakfast.

☞ President Johnson is said to be like the mountain of Chimborazo, because he is the greatest of the Andies.

New Brunswick.

The Grand Falls *Express* announces that the "gold fever" in Victoria county continues unabated. Several sluices have been made, and in all probability a company will be formed here this week, for the purpose of testing the extent of the bearing. Victoria county is rich in mineral wealth, not only in gold, but also in silver and copper; the silver is particularly rich, and we heard a gentleman, whose knowledge of these matters ought to be sound, say that thousands of dollars would be invested in far less profitable mining in any other country.

Geological Discovery.

An interesting geological discovery has been made in the Upper Wenlock shale of Dudley. Mr. L. P. Capervell has found a perfect specimen of *Goniophyllum pyramivery dale* in this deposit. This is the first occasion in which this fossil has been found in British Silurian strata. The fossil has been identified by Herr Lindstrom, the celebrated author or the "Zoantharia Rugosa."

WHAT IS SAID OF THE "JOURNAL OF MINING" BY THE PRESS.

From the Oregon State Journal, June 16.

W. F. Loomis is the California agent for the American Journal of Mining, published in New York weekly, at four dollars per year. It contains mining intelligence from all parts of the American continent, and devotes much space to California, Colorado, Nevada, Idaho, Montana, and all the mining localities of this coast. It is superior to any of the mining publications which we have yet seen.

From the Rocky Mountain (Denver) News, June 13.

The American Journal of Mining.—We receive this valuable paper regularly from its office of publication, 37 Park Row, New York, and find it one of our most prized mining exchanges. It is weekly filled with valuable and interesting matter to miners and mill-men, and should receive a largs subscription list from Colotrado.

LABORATORY OF INDUSTRIAL CHEMISTRY,

DIRECTED BY

Prof. H. Dussauce, Chemist.

Advices and consultations on chemistry, applied to arts and manufactures, agriculture, metallurgy, etc.; plans of factories, drawings of apparatus. He can furnish the most recent improvements in chemical fabrications, such as chemical products, petroleum soaps, candles, colors of lead and zinc, varnishes, ceramic glass, wines, liquors, vinegars, matches, inks, dyeing and calico printing, perfumery, colors of coal tar, tanning, etc., etc.

While in Europe he will buy process for parties, and sell chemical or other patents, if desired. He will give all necessary information to exhibitors to the great Exhibition.

Address 13 Avenue Bugeaud,
Quartier de Passy,
Paris, France.

OCEAN TELEGRAPH CABLE.—WE RESPECTFULLY call attention to Samples of an

OCEAN TELEGRAPH CABLE,

manufactured by us, and exhibited in September, 1865, at the Annual Fair of the American Institute, at the Armory in Fourteenth street. This sample is made upon the true principle for a Deep Sea Cable to be laid and worked successfully.

It has been Approved by all Scientific and Practical Men who have Examined it.

We propose to manufacture this Cable for any parties who may approve it, to be laid from

NEW YORK TO BERMUDA,

and from thence to

The Azores, and to England, France or Spain,

and we will undertake to make and warrant any length required for that purpose.

Capitalists, Telegraph Companies, and others interested, are invited to call and examine samples, &c., at our Office and Salesroom, 113 Liberty street.

THE BISHOP GUTTA PERCHA CO.
Sam'l C. Bishop, General Agent.

New York, August, 1866. 21-i

TURNING LATHES.

American Institute 1865 Prize Medal

TURNING LATHES,

For Foot or Steam Power,

MANUFACTURED BY

James Stewart's Son,

AT 252 CANAL STREET, ENTRANCE, 107 ELM STREET, N. Y.

ESTABLISHED 1826.

17-ps ADAM STEWART.

CARD.—Professor H. Dussauce, Chemist, lately from the Laboratory of the French Government, will reside in Europe several months. He takes occasion to inform his numerous friends that he is ready to transact any business there in the chemical line, such as buying books and apparatus, machinery, processes, etc., selling chemical patents, etc. For further information addres 13 Avenue Bugeaud, Quartier de Passy, Paris, France.

CHARLES P. WILLIAMS,

ANALYTICAL AND CONSULTING CHEMIST,

AND

MINING GEOLOGIST,

No. 138 WALNUT STREET, PHILADELPHIA.

Assays and Analyses of Ores, Soils, etc.,

Executed with Promptness and Accuracy.

EXAMINATION OF, AND REPORTS ON, MINERAL LANDS AND MINES FURNISHED ON APPLICATION.

10-ps

JULIUS G. POHLE, M. D.,

FORMERLY OF, AND SUCCESSOR TO,

Dr. JAMES R. CHILTON & CO.,

Analytical and Consulting Chemist,

No 489 BROADWAY, - - - - - - NEW YORK

(N. W. COR. OF BROOME STREET.)

Analyses and Assays made of Ores of Gold, Silver, Quicksilver, Lead, Copper, Manganeese, Nickel, etc., etc.; Minerals, Alloys, Petroleum, Cummercial Articles, etc 1-tf

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IMPORTANT TO MINING COMPANIES INtending to erect Machinery in California, Nevada, Idaho, Montana, Arizona, Mexico, or any part of Pacific coast.

The fact being indisputable that many of the failures in mining operations are caused by not having machinery adapted to working the ore, it is of the first importance to start right on this point.

MR. CYRUS PALMER, one of the proprietors of the Miner's Foundry, San Francisco, has lately arrived, and will remain in New York and vicinity for some months, and is prepared to take contracts to furnish all kinds of mining machinery of the most approved style at short notice, delivered in San Francisco, or at any of the mines on the Pacific coast. He will also, if required, contract to build mills at the mines, and put them in complete running order.

Mr. Palmer has just left the Pacific coast, and is therefore, acquainted with the most approved machinery in use for reducing ore and saving the precious metals. Mr. P. has not only been actively engaged for the last ten years in manufacturing mining machinery, but has had large experience in working mines and reducing ores. On application to his address, 25 Nassau street, by letter or otherwise, he will be pleased to give any information required in regard to mining or other machinery, gratis, to any company, whether they wish to contract or not.

Mr. Palmer refers to the following companies for whom the Miners' Foundry have built mills the past year:

Knickerbocker and Nevada, 70 Cedar street; Lincoln Company 80 Broadway; Cosmos Company, 158 Broadway; Connecticut and Nevada Company, 47 Liberty street; Cobden Company, 17 Broad street; New York Company, 80 Broadway; Tarshish Company, 80 Broadway; Washington, 80 Broadway; Metteacom Company, 144 Chambers street; Consolidated Company, 157 Broadway.

Mr. Palmer can be found at the office of R. H. Vance, Esq., 25 Nassau street, corner Cedar, from 11 to 12 o'clock, daily 13-a

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JAY COOKE & CO.,

BANKERS.

In connection with our houses in Philadelphia and Washington, we this day open an office at No. 1 Nassau street, corner of Wall, in this City.

Mr. EDWARD DODGE, late of CLARK, DODGE & CO., New York; Mr. H. C. FAHNESTOCK of our Washington house, and Mr. PITT COOKE, of Sandusky, Ohio, will be resident partners.

We shall give particular attention to the purchase and sale of GOVERNMENT SECURITIES, and to orders for purchase and sale of STOCKS, BONDS and GOLD.

JAY COOKE & Co.

New York, March 1, 1866. 9-ps

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BANKERS,

CORNER PINE AND NASSAU STREETS,

NEW YORK,

ISSUE

CIRCULAR NOTES & LETTERS OF CREDIT FOR TRAVELLERS,

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MERCANTILE CREDITS

For Use in Europe, China, etc. Also Make

Transfers of Money to California & Oregon, by Telegraph.

12-ps INTEREST ALLOWED ON DEPOSITS.

OIL LANDS FOR SALE.

Thirteen Thousand Acres of Land,

in the Canada Oil Regions, in the Townships of Enniskillen, Dawn, Zone, Moore, Brooke and Sombra, for sale or to lease, for Oil purposes, in portions to suit purchasers.

For terms and particulars apply to the proprietor.

4-qp T. D. LEDYARD, 74 Yonge Street, Toronto.

INCRUSTATION OF

STEAM BOILERS.

This greatest of evils in the use of steam is entirely prevented by the "Anti-Incrustation Powder" of

H. P Winans, 11 Wall Street, New York.

INVENTED AND INTRODUCED IN 1855.

now ten years in successful operation in over 6,000 boilers, without injury, and saving many times its cost in fuel and repairs.

A clean boiler generates steam more freely, and will outlast ten dirty or incrusted ones. 14-ps

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PORTABLE STEAM ENGINES.

Brayton's Safety Steam Generator and Engine.

A PERFECT SUCCESS.

By this invention the long sought-for object has been accomplished, to wit: A means by which Steam can be Generated Safely, so that there shall be no more danger from explosion than with the hot-air engine, and at the same time retain all the power of the steam engine. This much sought-for result has at last been accomplished, and after many severe tests we feel fully warranted in offering this Steam Generator and Engine to the public as a perfectly safe power, and at the same time a cheap power. As a generator of steam for heating buildings, etc., there is not its equal in use.

For further information, or circular, address

R. A. HUTCHINSON, Agent.

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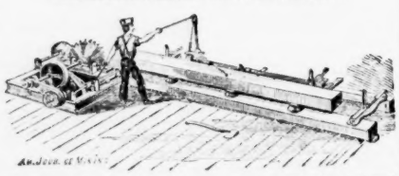
WINTER'S IMPROVED

PORTABLE CIRCULAR SAW MILL,

WITH ENGINE AND BOILERS, AND

Lane's Patent Set and Feed Works,

THE GREATEST IMPROVEMENT OF THE DAY.



The entire log of any length instantly and unerringly set at both ends at the same moment, by the sawyer, with a single motion of the hand. The Patentee, Mr. LANE, OFFERS TO WAGER $10,000 that, from selected lumber, he will have cut with the "A" Mill of the above improvement and a single saw, 30,000 ft. of inch boards in twelve consecutive hours. If the party accepting the bet proves the winner, we pledge ourselves to present him with the Mill employed in the trial. Who is disposed to test our sincerity? Pamphlets furnished. Address

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CONSOLIDATED LINE.

Great Through Route

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AND

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AND

EXPRESS COMPANY.

having consolidated the property of the "OVERLAND STAGE LINE" and the "OVERLAND DISPATCH COMPANY"—comprising all the Overland stage lines running west from the Missouri river—and largely increased and improved their stock and coaches and reduced their rate of fares nearly 25 per cent, will run a

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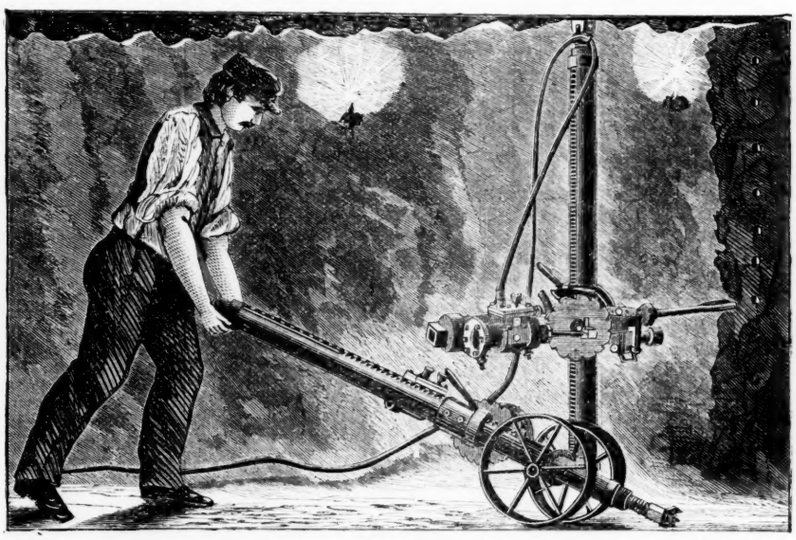

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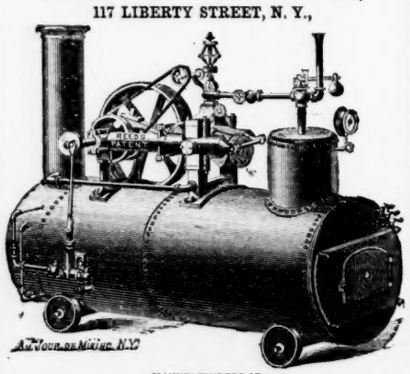

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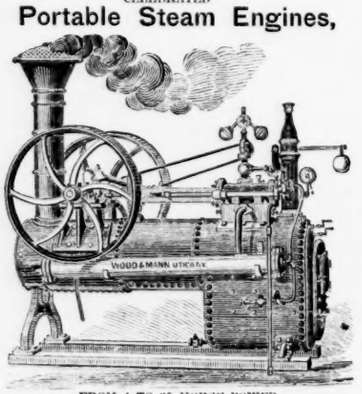

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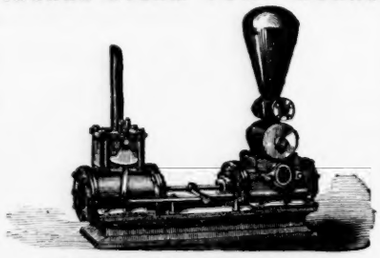

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